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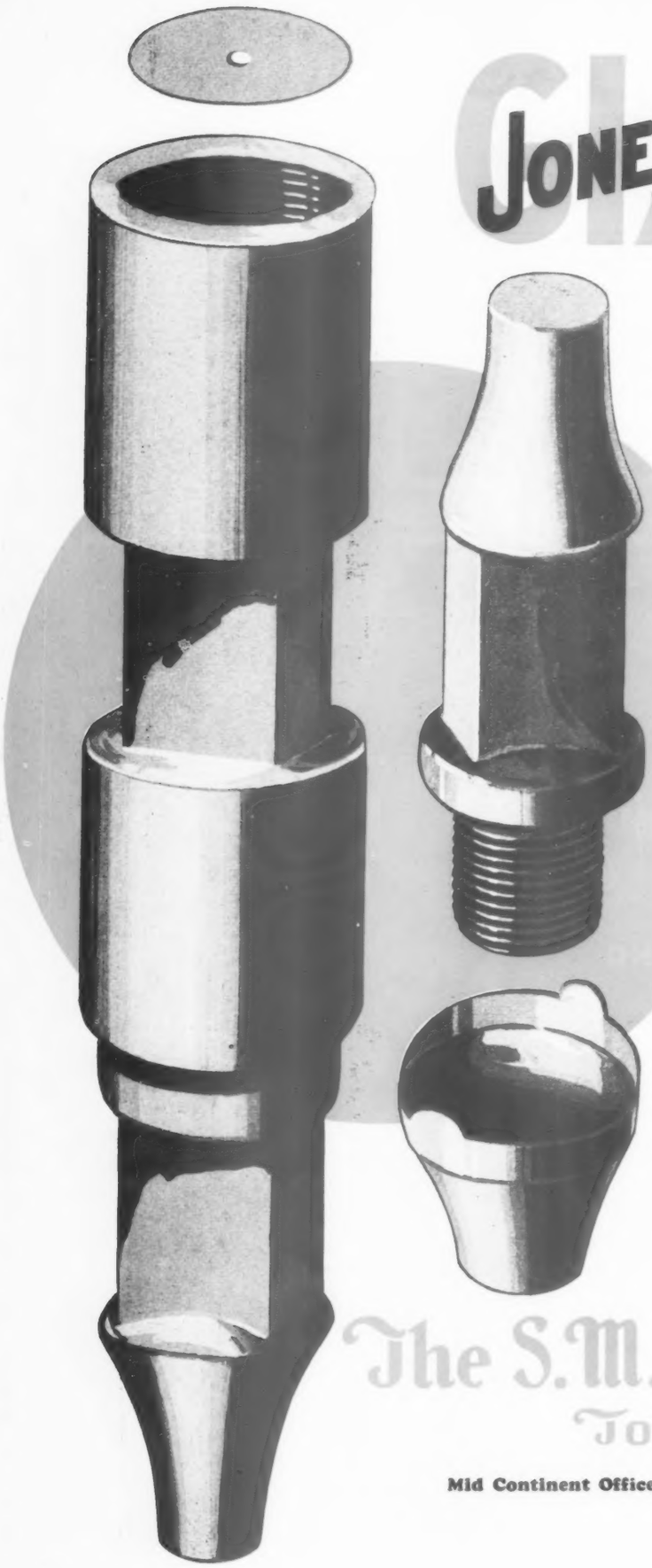

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PRODUCING REFINING MARKETING

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ProductionClimbing;MarketSoftening

Highest daily average estimated production week ended May 30, 1925, 2,347,984 bbls. Lowest in 1925, January 3, 1,911,730 bbls.

Developments in Seminole Pool in Oklahoma Result in Upward Revision of Estimates of Ultimate Output There

By Andrew M. Rowley

Highest daily average estimated light oil production in 1925, week ended January 17, 1,525,220 bbls. Lowest in 1925, July 18, 1,374,173 bbls.

Further gains in crude oil production with indications a still greater output will be experienced before any material declines can be expected, together with a general softening of the refined oil market, unfavorable motoring weather affecting gasoline consumption, impressed the industry in general during the past week the time is rapidly approaching when readjustments may be expected in the price structure. While crude is still being withdrawn from storage in Oklahoma and Kansas, refiners in those two States curtailed their runs to stills about 16,000 barrels a day the first of this month which will have some effect on the quantity being delivered by the major purchasing companies. In addition, developments in the Seminole Pool in Oklahoma indicate it will be but a comparatively short time until the increase in production there will offset the quantity of crude now being withdrawn from storage in Oklahoma and Kansas.

When the big crude oil buyers start to put oil in storage, a reduction in price is inevitable. Just when this condition will be reached depends very largely upon the Seminole Pool and indications now are this area will show very substantial increases in production in about 10 days or so. A most important development of that area of the past week was the completion of a Wilcox sand producer in the northern part of the field, the new well making 4,720 barrels the first 24 hours and causing former estimates of ultimate production of the pool to be revised upward, it being felt now the field will have little difficulty in reaching a peak of 100,000 barrels. When it is considered this crude averages about 42 gravity and pipeline facilities are being increased to handle the production, its immediate effect upon the general situation is not hard to visualize.

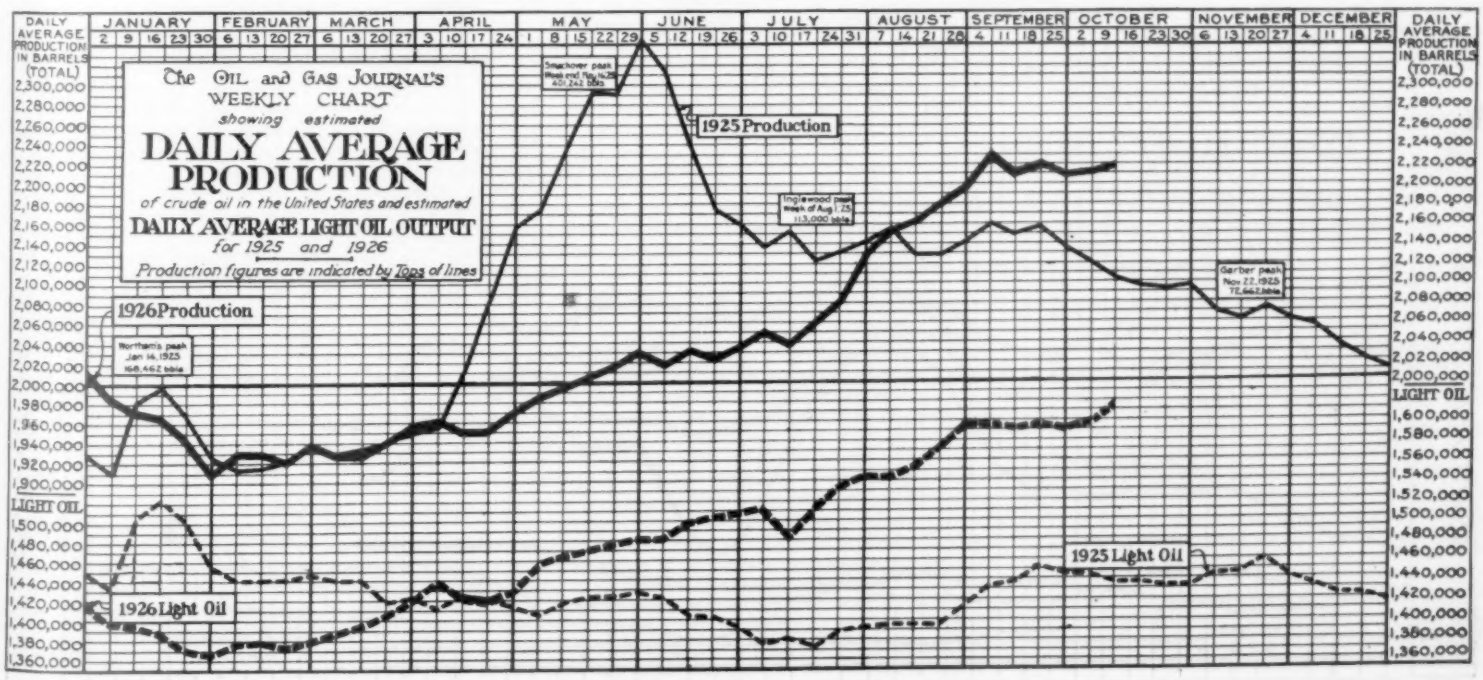
The substantial increase in production of the Texas Panhandle during the past week will have little or no immediate effect upon the situation in general. During September only about 59,000 barrels a day of the production of that area was shipped to markets and very little more than that is being shipped out in tank cars at this time. Of course, it must be remembered the remainder of this production is being stored and will be available for shipment when needed and a much larger quantity will find its way to markets early next year.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity crude oil in the United States for week ended October 9, and a comparison with the previous week follows:

	Oct. 9		Oct. 2	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	36,845	.....	38,355	.....
Burbank	47,770	.....	46,665	.....
Other Osage Fields	34,465	.....	34,490	.....
Cushing and Shamrock	21,420	.....	21,460	.....
Bristow and Eastern Bristow	27,270	.....	27,315	.....
Cromwell	15,235	.....	15,305	.....
Garber	26,050	.....	26,590	.....
Blackwell-Braman	25,970	.....	23,195	.....
Seminole	34,945	.....	29,970	.....
Wewoka	26,980	.....	26,605	.....
Northern Miscellaneous	114,250	.....	115,150	.....
Southern Fields	63,710	.....	65,410	.....
Total Oklahoma	474,910	.....	470,510	.....
North Louisiana	41,365	16,700	41,710	16,465
Arkansas—				
Smackover	14,145	117,870	14,225	118,610
Miscellaneous	18,145	.....	18,455	.....
Total Arkansas	32,290	117,870	32,680	118,610
North Central and West Texas	195,331	.....	193,864	.....
Texas Panhandle	140,495	.....	125,135	.....
Powell	26,300	.....	26,750	.....
Mexia, Currie, Richland	14,540	.....	14,440	.....
Nigger Creek	13,310	.....	12,000	.....
Wortham	5,950	.....	6,025	.....
Kansas	114,760	.....	115,310	.....
Total Mid-Continent Area	1,059,251	134,570	1,038,424	135,075
Gulf Coast	.....	173,255	.....	184,580
Southwest Texas	.....	44,970	.....	45,465
Eastern	109,200	.....	110,000	.....
Rocky Mountain Area	98,265	.....	103,355	.....
California—				
Santa Fe Springs	48,000	.....	48,000	.....
Long Beach	94,000	.....	95,000	.....
Huntington Beach	47,000	.....	47,500	.....
Torrance	5,000	22,000	5,000	22,000
Dominguez	22,500	.....	23,000	.....
Rosecrans	13,000	.....	13,000	.....
Inglewood	25,000	17,000	25,000	17,500
Ventura Avenue	51,000	.....	50,000	.....
Remainder of State	47,500	210,000	43,000	209,000
Total California	353,000	249,000	349,500	248,500
Total United States	1,619,716	601,795	1,601,279	613,620
Grand Total		2,221,511		2,214,899

→ **Total Increase, 6,612 Bbls.; Light Oil Increase, 18,437 Bbls.** ←



WHAT AND WHERE TO BUY—PAGES 169-170-171

Refined Market Trends Unchanged

Practically All Oklahoma Products Suffer Additional Price Declines With Demand Inactive. Kerosene Tankwagon Cut

By Neil Williams

There were no developments of importance in the Oklahoma (Group 3) refined market the past week, and, on the whole, general conditions were little changed. A slight tendency toward firming was noticed Thursday, Friday and Saturday due to efforts of sellers to hold quotations, but Monday and Tuesday found moving prices a little lower than a week ago.

A reduction of 1 cent in tankwagon prices throughout the territory of the Standard Oil Co. of Indiana, effective October 13, was announced Tuesday, but late Tuesday this had had little effect on kerosene. The reduction apparently had been discounted and refinery prices showed no further weakening.

The decline in prices during the week was not as rapid as it had been in previous weeks, and, for this reason, it was believed by many sellers that the market really was on the verge of steadying with possible strengthening. However, failure of any improvement in demand to materialize soon brought out offers of concessions on the part of sellers anxious to move material.

The demand for all refined products, as in previous weeks, was only for small lots and for immediate shipment to care for the buyers' absolute necessities. In the majority of cases the buyers demanded car numbers with orders and they usually were able to get them due to the easiness with which material was available.

Some improvement in weather conditions in many parts of the Mid-Continent's marketing territory caused a little better feeling among refiners. This may have been the cause for the attempt to hold quotations the latter part of last week as refiners on the whole are looking for a period of domestic buying of gasoline with the first indication that there may be a period of good motoring weather.

So far the better weather conditions have been of too short duration to permit any material increase in gasoline consumption except in cities and on hard-surfaced roads, and, as a result, jobbers have not found it necessary to make any important purchases. However, the very nature of present gasoline orders, which usually are for rush shipment, indicates that jobbers really are low on gasoline and if a period of improved consumption materializes they will be caught without supplies.

Fuel Oil Easy

The attempt to check price declines perhaps was most apparent in fuel oils, and these products tightened in price during the week although there was no improvement in demand. Some sellers advanced quotations and held for the time, but Monday and Tuesday these products again were easy, with prices from 2½ to 5 cents lower on some grades than they were a week ago.

Fuel oils have not been very free in

(Continued on Page 146)

REFINED MARKET BAROMETER

Generally weak, summed up refined markets the past week. Diesel oil was firm on the Atlantic Seaboard, and furnace oils, including distillates, were in fair demand, but practically all other products were inactive, and, if prices were not lower than a week ago, they were extremely uncertain, with trends downward. Unfavorable weather throughout the country has reduced gasoline consumption below expectations and below production, and sharp tankwagon reductions are predicted. The weakness of kerosene was reflected in tankwagon cuts throughout territories of the Standard Oil Cos. of New Jersey and Indiana. Expected improvement in demand for fuel oils has failed to materialize, and west of the Rocky Mountains these products, including engine distillates, have experienced market reductions. Gas oil demand was slightly better in some areas the past week, but the situation continued uncertain. Lubricating oils held up fairly well in all areas.

Mid-Continent—Price declines continue, but not so rapid as in previous weeks. No improvement shown in demand. Gasoline waits weather developments. Previous to announcement of tankwagon reduction by Standard Oil Co. of Indiana, kerosene felt a tendency toward steadier prices, due to some buying in north Texas, but situation now unsettled. Fuel oil and gas oil still slow, and distillates less active.

Atlantic Seaboard—Gasoline weaker, due to unfavorable weather and to backing up of oil in storage. Tankwagon cut expected. Weakness of kerosene reflected in tankwagon cut. Diesel oil firm, but other fuels inactive and prices shaded. Gas oil demand better. Lubricants holding up.

Pennsylvania—Gasoline softer following Pennsylvania and Delaware tankwagon cut. Weather unfavorable. Kerosene demand shows further loss. Lubricants unchanged.

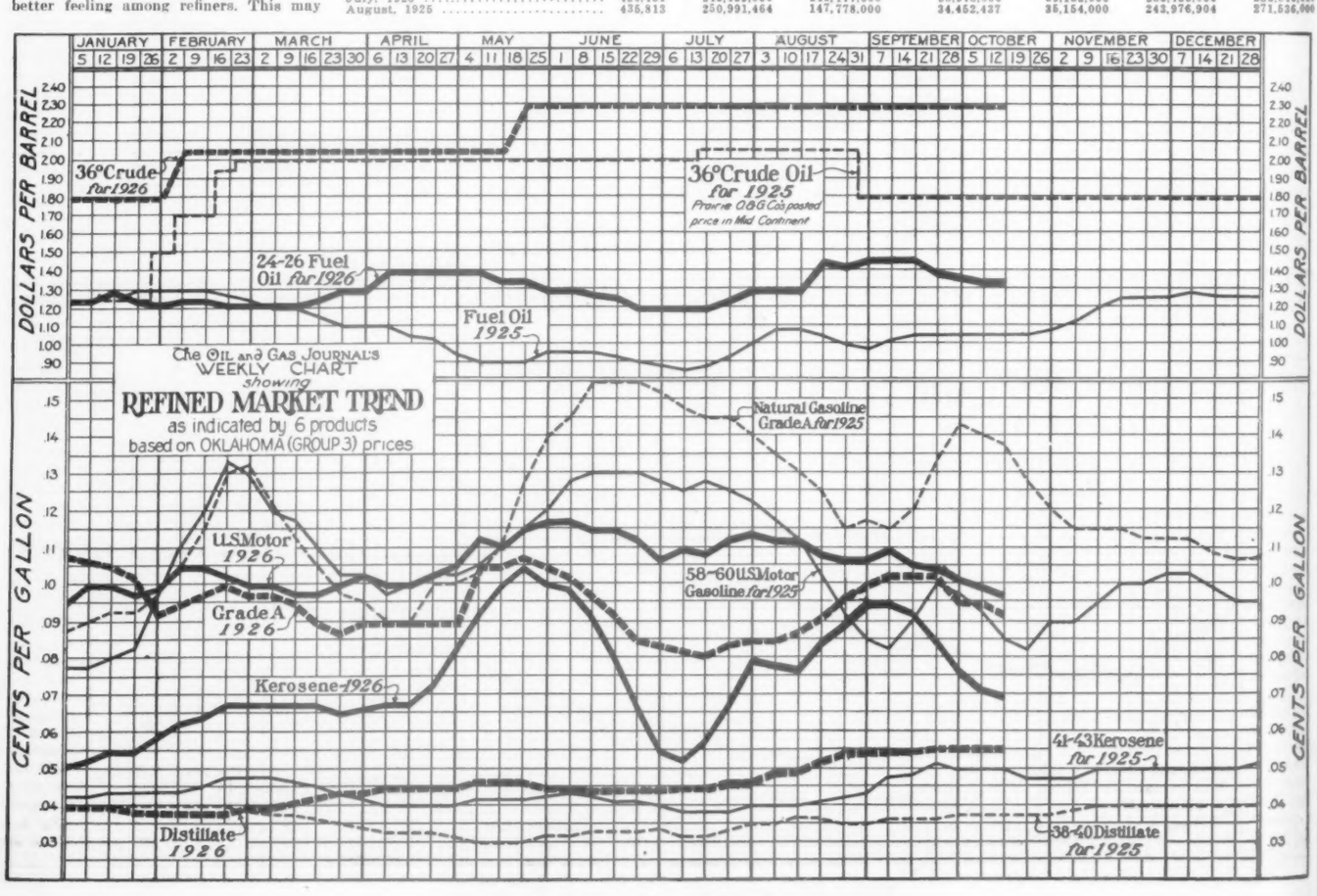
Chicago—Gasoline consumption continues light and markets decline. Kerosene tankwagon cut 1 cent by Standard Oil Co. of Indiana. Fuel oil, gas oil slow, and distillate demand uneven.

California—Gasoline still uncertain, with tankwagon unsettled. Prices of gasoline, engine distillates and fuel cut in last two weeks. Lubricants unchanged.

Gulf Coast—Unchanged.

SUMMARY OF MID-CONTINENT STATISTICAL SITUATION, BASED ON BUREAU OF MINES REPORTS

	Daily Crude Runs to Stills (Bbls.)	Gasoline Produced	Gaso. Stocks Last Day of Month	Kerosene Produced	Kero. Stocks Last Day of Month	Gas and Fuel Oil Produced	Gas. Fuel Oil Stocks Last Day of Mo.
August, 1926	421,354	267,686,000	134,610,000	56,440,000	28,014,000	236,292,000	296,310,000
July, 1926	420,461	245,452,000	141,177,000	38,978,000	29,132,000	236,436,000	283,540,000
August, 1925	436,813	250,991,464	147,778,000	34,452,437	35,154,000	243,976,904	271,536,000



Topic for Tulsa Meeting of A. P. I.

Discussion of Petroleum Research at Philadelphia Session of A. C. S. Inspires Suggestion for Deliberation Here

By Phillip Kates*

The meeting at Philadelphia the first week in September of the American Chemical Society is concentrating the attention of the scientific world on the advance in the petroleum industry. Frank A. Howard, president of the Standard Development Company of New Jersey, in a masterly paper pointed out the advance in refining methods during the past 50 years; Mr. DuPont explained the importance of tetraethyl lead, and Professor Norris announced the synthetic production of a small drop of methane, the primary hydrocarbon, or marsh gas.

Mr. Howard referred to the gifts by Mr. Rockefeller and the Universal Oil Products Company of $250,000 each for the purely scientific study of the nature of petroleum, which it is hoped will be the nucleus of a permanent fund to carry on investigations into the possibilities of the use of crude oil, similar to the work done for so many years in the dye and explosive industries.

The idea that purely scientific work would be beneficial to the oil industry seems to be gaining ground. There has been much investigation, and many great advances. But heretofore they have been the work of rather unrelated groups as representing certain refineries or groups of refineries, working for more gasoline recovery, or more economic methods of refining. Naturally, this practical work has produced immediate results, but if its good point has been that there has been immediate improvement of the balance sheets of the corporations financing the work, it has also a bad point, in bringing about a condition in which scientific investigation is subordinate to the financial progress of the corporation for which it was done. Thus we have a condition in the refining end of the business by which each group of investigators claims for its particular theory results superior to any other. In spite of the tremendous advance in refining methods, there has been and is lacking the real spirit of scientific research.

Public Confused

It is said that there have been granted over 2,500 patents for improvements in refining methods, and that as many more applications for new patents are pending. Since the practical demonstration that the application of heat and pressure to crude oil induces a real chemical change, most of the new patents apply to ideas relating to the cracking process. And instead of a calm examination of the actual merits of the various processes, we are hearing each process claimed by its backers as the most efficient, both from the standpoint of recovery and quality of product. The result is that the public, instead of being informed of the progress in the industry, is becoming confused, and naturally becomes skeptical. And quite naturally, if the public becomes doubtful as to the frankness of the industry on this basic phase of its development, it may readily become suspicious of the industry as a whole.

In spite of the multitude of patents granted and pending, the basic processes are very few; in fact, they may almost be counted on the fingers of one hand. And in spite of all the apparent variations, they are basically the same, the application of heat and pressure. In view of the fact that an automobile user must necessarily purchase gasoline wherever his tank becomes empty, it is apparent that, except in a very limited sense, he has no control over the specifications of the gas he uses, and the same is largely true of lubricating oils. He finds, as a practical matter, that one gasoline does about as well as another, and one oil will lubricate as well as another. He wonders, then, why the multiplication of trade names and the extravagant claims for different brands. A chemist may know that Gulf Coast oil may make up into a lubricant of low cold test, and that certain grades of California crude may give a more uniform gasoline. But the demands of the industry require that all oils be used, and the millions of users of cars neither know nor care about the slight differences that the laboratory may reveal.

Great Changes Impending

But in spite of the fact that any gasoline will make a car go, and any oil will lubricate the machinery, there are certain great changes impending as a result of the advance in refining methods, and of greater knowledge of the chemistry of gasoline. The American automobile developed as a comparatively low pressure engine, as contrasted with European specifications, because of the cheapness of gasoline. The American public had a greater supply of gasoline than was needed, in the first stages of the automobile industry, and the compression ratio, 4.5:1, was sufficient. The expansion of automobile use in the United States came not only because of what we consider the super genius of the American people, but because we had the gasoline that was cheap enough to enable the manufacturer to sell low compression engines that burned more than the people of other countries could afford to buy. If gasoline in the United States had been a half dollar a gallon, as it has been in Europe, the history of the automobile industry in the United States would have been the history of expensive high pressure engines, and limited output.

But the goal of the automobile industry in the United States is now towards the high compression engine, with increased mileage per gallon. Higher ratios are in order. It is said that General Motors has developed an engine that will make 50 miles to the gallon. That, of course, demands a quality of gas not now commercially available. The change in engine specifications is inevitable, but it will be slow, for the millions of cars now on the roads will run for many years and their replacement by new types will take a long, long time.

But the trend has set in, and the three industries, oil, steel and automobile, must work together for the future. At the present time the new cracking methods are demanding new types of steel, for the tubes and stills; and new welding processes to give uniformity of strength. And the better built engines, which already are giving more mileage per gallon, are demanding a new type of gas.

Need for United Action

In this period of development it is unfortunate that the oil industry cannot approach its contribution to the solution of the problem as a unit. One advance has been made, not by the oil industry, but by General Motors Research Corporation, which is claimed to give a solution to the immediate problem, the mixture of tetraethyl lead with gasoline. The process is patented and owned by a subsidiary of General Motors Research Corporation. Its backers claim that it is the greatest advance made in refinery methods since the discovery of the cracking process; but its opponents claim it is simply a dope added to the gas which gives no better results than the processes which others have developed.

Simply stated, the problem is this: Gasoline is essentially a compound, distilled under commercial, not under laboratory conditions. There are inevitably variations in quality, due to substances in the compound which cannot be entirely eliminated, or the absence of sufficient aromatic hydrocarbon of the benzol type. So, when the gas is compressed, prior to firing, it may detonate, or explode prior to the proper time. The result is that instead of a rhythmic or regular cycle of explosions, there will come from time to time a hangover explosion. This we call knocking. We used to consider it as the result of carbon forming in the cylinders, but now it is believed to be merely the irregular firing caused by the impure blend which is inevitable in commercial gasoline. The introduction of a small quantity of tetraethyl lead into the gasoline prevents the detonation, or unexpected firing. The effect of the detonation, or knocking, is to shake the cylinder, and lossen the piston. The delicacy of the adjustment, which makes for efficiency, is such that this continuous shaking, not allowed for in manufacture, both shortens the life of the engine and renders driving more difficult.

Tetraethyl Lead

Just what the effect of the tetraethyl lead is, it may be impossible to say with certainty. But chemists claim that in the firing the gasoline is not vaporized, but broken up into its various constituents. There is thus a destruction of the substance. But the various elements of which it is composed, in the process naturally do not act uniformly, and while it is difficult to express what happens, nearest statement would be that there are voids of different size between the particles. The tetraethyl lead rushes into these voids and acts like a cushion, or rather an equalizing or stabilizing substance, to make the pressure more uniform.

If this explanation be correct, then this substance serves a double purpose; it prevents detonation, and makes the determined firing more regular. The effect of this upon the innumerable explosions can be readily seen. It prolongs the life of the engine and insures ease and uniformity in driving.

But, as scientists do not yet agree on the point, it is obvious that the most important step to be taken by the oil industry as a whole is the more thorough understanding of the action of gasoline in explosion; and of the nature of the compound itself. One may talk glibly of the series of hydrocarbons, from methane on up, but the mystery is not solved by symbols.

Purely Scientific Study

The heads of the industry are awake to the necessity for purely scientific study. But the fund established so far is only a beginning, for the work is the work of years, and the fund should be an annual appropriation, not a spasmodic gift. As Herbert Hoover said at the last convention of the American Society of Engineers: "The day is gone by when we can depend very much upon consequential discovery or invention being made by the genius in the garret. A host of men, great equipment, long, patient, scientific experiment, to build up the structure of knowledge, not stone by stone, but grain by grain, is today the fundamental source of invention and discovery."

The discoveries and advances in the petroleum industry we may almost say, have heretofore been made in the garret. The discovery of the cracking process was certainly the result of no great program of research, aided by adequate appropriations from the industry, but due to the genius of Doctor Burton. The improvements and variations have been made under the stress of commercial competition in the various refineries, and in the wholly inadequately equipped laboratories of the Government. The discovery of the effect of the addition of tetraethyl lead to gasoline was made in the laboratories of the automobile industry, by the General Motors Research Corporation.

The day of the garret genius is past. The problems ahead are too vast for one man, or one company, to approach.

Secretary Hoover, speaking academically, suggests the need of a host of men, of great equipment and long, patient experiment that requires huge annual appropriations of money.

If it were suggested to the Government that the great units in the oil industry should pool their resources, their knowledge, their equipment and their funds to carry on the scientific work of the development of petroleum to its ultimate use to the nation, would Secretary Hoover, as a member of the Cabinet, sanction such a pool? Would Secretary Hoover speak in a Cabinet meeting as he spoke to the American Engineers? If he would, and if the Government would wholeheartedly support such a combination, then the possibilities are unlimited.

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*Sixth of a series of articles by a Tulsa attorney who has made a study of the petroleum industry.

Runs to Stills Cut 11,020 Barrels

Increases by Arkansas and Louisiana Refiners Prevent Greater Throughput Reduction for Entire Mid-Continent

By Neil Williams

Mid-Continent refineries ran 408,975 bbls. of crude to stills October 1, according to The Oil and Gas Journal's monthly review of refinery operations. This represented a decrease of 11,020 bbls., or approximately 2.6 per cent, from the throughput on the first day of the previous month. Runs on September 1 totaled 419,995 bbls., the highest since August 1, 1925.

The monthly report includes all active Mid-Continent refineries, a total of 126 plants with a combined crude capacity of 639,700 bbls. and cracking capacity of 228,210 bbls. daily. Of the 126 plants, 110 are operating. The remaining 16, although not running, have not been shut down as long as a year, and, hence, are considered in the active list.

While the decrease in runs was not as great as had been anticipated, considering the Mid-Continent as a whole, yet there was a decided effort on the part of a majority of the individual refiners to reduce their operations to counteract the generally poor market conditions.

This was indicated in the fact that whenever possible individual refiners reduced runs but unavoidable circumstances which have developed in the past few weeks prevented many companies from checking operations and in some cases forced them to run more crude. Other companies operate on more or less of a fixed schedule from year to year and hence their runs seldom vary because they have a certain amount of crude to handle during the year and if runs were reduced one month they would only have to be made up the following month.

Arkansas-Louisiana Up

Substantial increases in runs at several Arkansas and north Louisiana plants were largely responsible for limiting the total reduction shown by the entire Mid-Continent. Because of contracts these companies found themselves with a large amount of crude and to dispose of it had to increase their runs. These increased runs made a decided showing in total figures both for these states and for the Mid-Continent as a whole.

It can be said that part of this extra crude which had to be disposed of in Arkansas and Louisiana was of very low gravity from the Smackover Field, and, as far as gasoline markets are concerned, may not be important. Most of this crude is only being topped for gas oil and possibly some naphtha.

Were it not for the increases in Arkansas and north Louisiana runs, there might have been a very healthy reduction in runs as Oklahoma, north Texas and Kansas operations were reduced by 15,870 bbls. October 1. Kansas refiners alone cut their runs 8,870 bbls. The reduction in Oklahoma amounted to 6,500 bbls.

A reduction in runs was only to be expected October 1 in view of the unusually poor refined market conditions during September. Virtually all products were weak because of a very light demand, and with prices received low in respect to crude costs, the majority of refiners were faced with a problem of very low profits, if any, if operations were not curtailed to a point where production of refined products would be more nearly in line with consumption.

Seasonal Decline Earlier

The seasonal decline in gasoline consumption, accompanied by a gradual reduction in refinery operations, ordinarily begins in early autumn and continues until spring but the falling off in consumption this year began earlier and was more pronounced because of an unusually long rainy season over practically all the Mid-Continent marketing territory.

Last year, September was a fairly good gasoline month compared with the previous months, and refiners enjoyed advancing markets. Consequently, last October 1 showed an increase in crude runs to stills of 7,885 bbls., making a total throughput of 415,575 bbls. This was 6,600 bbls. greater than the runs of October 1 this year as is shown in the accompanying summary tables.

Operations last year on the whole were on a greater scale than this year but it must be taken into consideration that refiners are obtaining greater yields now than then, which offsets the difference in actual crude run to the stills. This may account for the fact that although consumption has been greater and actual crude runs less than last year there has been a heavy production of gasoline all summer with the market most of the time continuing disappointing.

Bearing on Crude Situation

The throughput reduction's bearing on the general crude situation is indicated in the fact that on October 1, Mid-Continent refiners were running only 34.8 per cent of the total production of this district. On September 1, approximately 36.5 per cent of the production was being handled by these same refiners. Mid-Continent refiners, as shown by these figures, are forcing more and more crude back on the major purchasers to be shipped to other refining districts or placed in storage.

This reduction in the percentage of crude taken by Mid-Continent refiners does not necessarily mean that there will be any immediate revision of crude prices. But if, at the same time, refiners in other sections of the country, particularly the Eastern and Gulf Coast districts, cut down on their purchases of Mid-Continent crude or production increases and the purchasing companies have to put more crude in storage, the cut in Mid-Continent runs is an important factor in the crude market.

As a reflection of the reduction in runs at Oklahoma and Kansas refineries, refined markets in these states were in much better shape statistically during September than in other districts of the Mid-Continent. Refiners in these two states were reported to be in fairly good position regarding stocks but were hampered in holding markets because of quantities of cheap material offered from other sections, where runs were increased. North Texas runs were reduced but the cut of 500 bbls. was so slight that it did not prevent many cheap offerings in competition with Oklahoma products.

There apparently was a general trend among Oklahoma and Kansas refiners to reduce runs as cuts from 100 to 3,000 bbls. were made by 13 plants in the former state and 6 plants in the latter. In addition to these cuts, the Barnsdall Refineries, Inc., shut down its Wichita plant as far as crude runs were concerned and on the first of the month was rerunning only. This brought the total runs in Kansas down by 4,000 bbls. as the Barnsdall plant had been handling that much crude daily.

The Barnsdall Refineries, Inc., also reduced runs at its two Oklahoma plants 2,000 bbls., 1,000 bbls. at Okmulgee and 1,000 bbls. at Barnsdall. The Tidal Refining Co. at its Drumright plant also made a cut of 3,000 bbls., the daily throughput now being only 6,000 bbls. The Producers & Refiners Corp. plant at West Tulsa was down 1,500 to 3,000 bbls. daily but most other reductions amounted to a few hundred bbls. at each of the plants.

In Kansas, the Skelly Oil Co. at El Dorado curtailed operations by 2,100 bbls. On October 1 it was running 9,900 bbls. in contrast to the 12,000 bbls. being run on the first day of September. White Eagle Oil & Refining Co. at Augusta also was down 1,000 bbls to 5,500 bbls. daily.

North Central Texas Operations

There was very little change in north central Texas operations, all increases and decreases being slight. It will be noted that the Kent-Middleton plant at Minerva is included in the accompanying tables. This plant has been operating but before had not been listed among the Mid-Continent refineries. For comparison of crude runs of October 1 and September 1, the September 1 figures have been revised to include it, as well as the Travis Refining Co. plant at Burkburnett. The Travis plant also was running on September 1 but was not reported in the list. Kent-Middleton also has another plant at Angus but this plant has been on the list regularly. The Peerless Refining Co. at Wortham, Tex., is being dismantled and has been removed from the list.

Noticeable in north Louisiana operations was the increase in runs from 18,500 to 22,000 bbls. at the Louisiana Oil & Refining Co. plants at Shreveport and Bossier City. This company has just increased its capacity, particularly at its cracking installation.

Runs were increased substantially by

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MID-CONTINENT REFINERY OPERATIONS

Table No. 1—(Based on Plants October 1, 1926, and September 1, 1926)

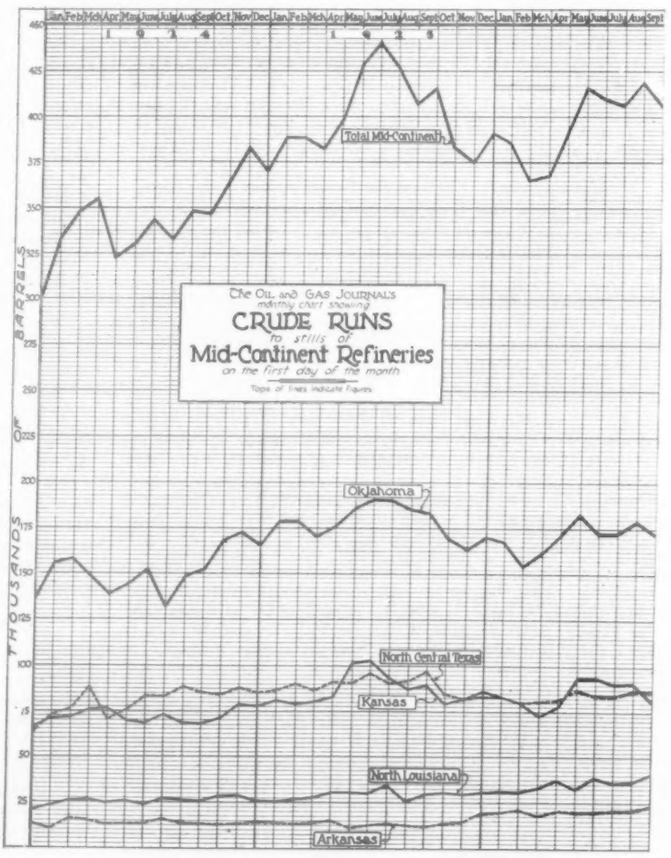
	*No. Plants Oct. 1	Crude Capac. (Bbls.)	Cracking Capac. (Bbls.)	Plants Opr. Oct. 1	Crude Runs (Bbls.) Oct. 1	Plants Opr. Sept. 1	Crude Runs (Bbls.) Sept. 1	Daily Decr'se Oct. 1
Oklahoma	52	263,300	93,550	49	173,850	49	180,350	6,500
N. C. Texas	39	170,400	49,450	32	85,525	32	89,025	500
†Kansas	21	127,000	56,500	17	83,150	17	92,020	8,870
N. Louisiana	5	47,000	16,000	4	40,100	4	37,000	§3,100
Arkansas	9	32,000	12,600	8	23,350	10	21,600	§1,750
Total	126	639,700	228,200	110	408,975	112	419,995	11,020

*Does not include plants which have been shut down one year or longer. †Includes one Missouri plant. §Increase.

Table No. 2—(Based on Plants October 1, 1926, and October 1, 1925)

	*No. Plants Oct. 1 '25	Crude Capac. Oct. 1 '25 (Bbls.)	Plants Opr. Oct. 1 '25	Crude Runs Oct. 1 '25 (Bbls.)	Daily Decrease Oct. 1 '26
Oklahoma	58	268,000	52	183,740	9,890
N. C. Texas	46	177,100	39	97,465	8,940
†Kansas	26	128,900	20	90,000	6,850
N. Louisiana	7	39,300	1	29,400	§10,700
Arkansas	14	35,700	8	14,970	§8,380
Total	151	649,000	125	415,575	6,600

*Does not include plants which have been shut down one year or longer. †Includes two Missouri plants. §Increase.


Jan. Feb. Mch. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mch. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mch. Apr. May June July Aug. Sept.
1924
1925
THOUSANDS OF BARRELS
Total Mid-Continent
Oklahoma
North Central Texas
Kansas
North Louisiana
Arkansas
The Oil and Gas Journal's monthly chart showing
CRUDE RUNS
to stills of
Mid-Continent Refineries
on the first day of the month
Tops of lines indicate figures

California Output Again Increasing

Ventura Avenue Field an Important Factor in Maintaining Production. Huntington Beach Consistent Producer

By L. P. Stockman

LOS ANGELES, Calif., Oct. 9.—The production situation in California has the boys guessing again as to what the future holds in store and, while some have expressed considerable anxiety over developments expected to materialize during the next several months, there does not appear to be any serious cause for alarm as far as crude oil production is concerned, although conditions from a refining standpoint are far from satisfactory. As a matter of fact refiners and marketers have had tough sledding all year and instead of conditions improving they have grown decidedly more unfavorable due to unrestricted competition which is as keen as a newly honed razor blade.

Major operators vehemently declare that there is no gasoline war on and, while this may be true as far as the larger companies are concerned, it is a matter of record that the small independent operators and bootleggers have become an extremely disturbing factor in southern California particularly in the territory adjacent to Los Angeles where gasoline can be purchased at service stations anywhere from 1 to 6 cents per gallon under the regular retail price.

Crude Oil Situation

In reverting to the crude oil situation it might not be amiss to refer in a general way to developments during the year to date and make a short survey of future conditions as they shape up at the present time. From a production standpoint there do not appear to be any particularly disturbing factors on the horizon, although it is nearly a foregone conclusion that the state's output is destined to register an increase between now and the end of the year unless some restrictive measures are taken to curb unnecessary drilling, or additional producing wells are shut in. California's daily average production during January of this year was 615,147 bbls. and it seems to be a pretty safe bet that the State will wind up the current year with approximately the same figure. Some believe that it will be closer to 635,000 bbls., but the writer is inclined to believe that the State's output will be somewhere between 615,000 and 620,000 bbls. daily around December 31. These estimates are based on the assumption, of course, that no restrictive measures will be taken during the next 90 days.

Fields Segregated

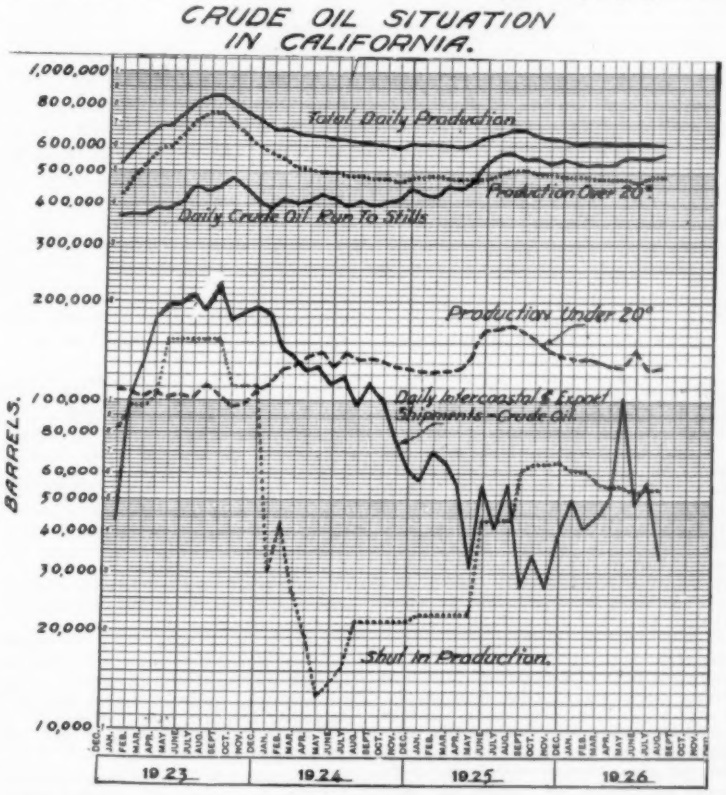
In considering the individual fields which will have an appreciable effect on production during the balance of this year we can eliminate Kern River, McKittrick, Midway-Sunset, Elk Hills, Lost Hills, Belridge, Coalinga, Summerland, Ventura County, Newhall, Los Angeles, Salt Lake, Whittier, Fullerton, Coyote, Montebello, Richfield and Newport, as the output of these areas should remain about the same as at present. Some of these fields will, of course, register gains due to additional drilling, installations of improved pumping equipment and more general utilization of gas conservation measures but this increase will probably be offset by declines in others of this group. This leaves nine live fields which are expected to hold the production balance during the next 90 days. They can be segregated into two groups, those which will fall off and those which under the impetus of new drilling will continue climbing.

Santa Fe Springs, Long Beach, Torrance, Rosecrans and Inglewood come under the first class, while Ventura Avenue, Huntington Beach, Dominguez and Seal Beach can safely be assigned to the latter. Of the areas expected to register declines, Inglewood stands out as offering the most relief. This field may possibly settle another 10,000 bbls. daily before the close of the year, in which event the field will be averaging somewhere around 30,000 bbls. per day. Long Beach may also drop off another 10,000 bbls. between now and the end of the year, although the decline in this area should be a little more gradual from now on. Santa Fe Springs, Torrance and Rosecrans should all be somewhat lower but the production curve of these fields has been flattened out for several months and hence no appreciable drop is anticipated.

Increases Expected

On the other side of the ledger we have those districts which under the stimulant of increased drilling give evidence of resulting in increased production. The most important district in this classification is without doubt the prolific Ventura Avenue Field where any new completion under 1,000 bbls. a day is considered a failure and generally results in an early decision on the part of the operator to deepen in order to get a larger penetration. It sounds funny to hear of a man killing a well doing 750 bbls. of high gravity oil a day but it is nevertheless being done. The Bolsa Chica Oil Co. turned such a trick up in the Ventura Avenue Field a few weeks ago and, unless all indications fail, the move has been a wise one. When this well was finished six or eight weeks ago it was found impossible to carry it below the 5,434-foot level due to the heavy gas pressure encountered and it was accordingly allowed to come in. The Associated, in the meantime, drilled its No. 33 Lloyd in the northern part of the field down to 6,261 feet and got a 5,500-bbl. producer. The Bolsa Chica plans to take advantage of the additional oil sand proven up and is already deepening its No. 1 Hartman, which by the way was at one time regarded as being entirely off structure.

While commenting on the achievement of the Bolsa Chica at Ventura Avenue it might possibly be well to mention the success which this concern is experiencing in its operations in the Kettleman Hills because the company stands an excellent chance of opening up a new oil field at that point. The Bolsa Chica's well in question has not yet been put on a conclusive pumping test but the outlook is promising. Of all the tests drilled in the Kettleman Hills this wildcat is the only one to show any favorable symptoms, although one other had some gas at a much deeper horizon. Three sands have already been encountered, two of which did not yield sufficient oil to warrant pumping, although they did yield 50 or 75 bbls. of oil when bailed. The third found at 2,360 feet is yet to be tested and, while it, too, may fail to stand the acid test, reports seem to indicate that it may be capable of pumping from 25 to 75 bbls. a day. The oil bailed out to date has been of a rather heavy grade, running around 18 degrees A. P. I.



Ventura Avenue Big Factor

Going back to the Ventura Avenue district, it might be of interest to call attention to the amount of work being done at present and just what effect this will exert on the production situation. There are about 15 or 20 drillers and deepening projects in this field scheduled for completion during the next 90 days and, while no accurate estimate can be made of their probable initial production, if they come in doing anything like their predecessors they should boost the present daily output of this district 50,000 bbls., up to somewhere around 65,000 or 75,000 bbls.

These anticipated new wells are fairly well distributed between the three principal operators working in that district. The Associated has five tests and two deepening projects on the Lloyd lease, three of which at the present time are around 5,300 feet, another at 5,800 feet, two at 4,700 feet and another just rounding 3,500 feet. On the Hartman lease, the company has one test at 4,700 feet and another at 1,500 feet. In the eastern part of the field, the company has No. 1 McGonigle down 5,500 feet with an excellent chance of getting a good flowing well. Seven new rigs are either standing or going up on the Lloyd lease at present and in view of this additional work it is evident that the Associated contemplates continuous drilling.

The General Petroleum, due to the activity of the Shell, Associated and others in offsetting its acreage, has found it necessary during the past few months to step up its drilling program and as a result has six tests under way and one deepening job on its hands. Of the six tests, four are below the 4,000-foot level, one is at 5,645 feet and the other at 3,000 feet. The workover is going ahead at 5,310 feet. The Shell has four drilling wells on the Edison lease, three on the Gosnell and a like number on the Taylor. Two drillers on the Edison lease are rotating ahead at 5,700 feet, another at 4,800 feet and the last of the quartet at 3,000 feet. Two of the three drillers on the Gosnell property are below 4,800 feet, while a like number on the Taylor lease are below 5,000 feet. It can be seen from the depths of these various wells that most of them should come into production before the close of the current year.

Huntington Beach

Now let us look over the situation at Huntington Beach where a very promising extension is being developed along the ocean front in the southwestern part of the field. Although it is a little too early to estimate the potentiality of the recently discovered deep zone in that section, the first three or four completions have been exceptionally promising. The first well in was good for around 800 bbls. daily but the next two came in flowing 2,000 bbls. and 1,690 bbls. respectively. The fourth, just turned loose, is flowing at the rate of 1,500 bbls. daily.

In brief resume of conditions, a month or so ago, and previous to the completion of the deep sand discovery in the extension, I estimated that this field would register an increase in daily production of around 10,000 bbls. before the close of 1926. This was predicated upon the result of drilling on the Standard's Lease "B", about a mile to the north and was based upon the expectation of getting producers in the extension ranging somewhere between 500 and 750 bbls. daily. In view of the fact that all four of the wells finished in this section to date have exceeded original estimates and also because of the apparent thickness of the producing horizon developed, I am inclined to believe that it will show even a larger increase than originally anticipated. Just how much of a gain the field will register depends entirely upon whether or not the producing formation will sustain town lot drilling, and only the bit of course will decide this question. Huntington Beach has been a wonderfully consistent field and in view of the fact that the Ashton zone was quite prolific in the northern part of the district, it would not be at all surprising if the deep zone in the southwest proved equally as good. At any rate it is getting off to a very auspicious start.

Deep Sand in Extension

The deep sand developed in the extension has not to my knowledge been definitely connected with any of the various zones in the older field but it is probably comparable to the Ashton with the upper

(Continued on Page 93)

Engineers Discuss Recovery Problems

More Efficient Production Methods in New and Old Fields the Burden of the Papers at A. I. M. E. Meetings in Tulsa

By James McIntyre

More efficient recovery from new as well as old fields was the feature of the two days meeting of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers at Tulsa October 11 and 12, and the interest taken in the subject was attested by the very large number of engineers, production men and executives in attendance.

The sessions were held in co-operation with the Mid-Continent Oil and Gas Assn. The Institute meetings were held in the large auditorium in the City Hall, which was crowded to its capacity on both days.

Julius Fohs, of New York, chairman of the Petroleum Division presided at Monday's sessions. John M. Lovejoy, Amerada Peroleum Corp., presided at Tuesday morning's meeting and Alfred G. Heggem of Tulsa, at the afternoon session.

Doherty Could Not Attend.

Disappointment was expressed over the absence of Henry L. Doherty of New York who was scheduled to discuss the paper of James O. Lewis on "Advantages of Unit Operation in Oil Fields," which was the keynote address of the first day's session. Mr. Doherty was unable to make the trip. Chairman Fohs said that the subject "Advantages of Unit Operations" was chosen before the Federal Oil Board's report appeared, showing that the oil industry is thinking along progressive lines. Continuing Mr. Fohs said:

"Efforts of the past three years have demonstrated that the recovery of oil from its reservoir beds may be greatly increased and greatly hastened if the production engineer will apply himself and his newer methods. Already the returns have been proven large—large enough to be a great factor in the present large daily output—but many of the fundamental facts of recovery remain to be discovered. It remains for them to be applied, and they will be, with increased results. I am not an alarmist who believes all our oil is found or is soon to be found, but as one who has sought for 15 years to help discover new pools, I am testifying their finding is daily becoming a harder task and the bonanza pool—the great producer—will become more and more difficult to find."

Gas and Air Lift

L. L. Brundred of the National Supply Co., led off at the first day's morning session with a paper. "The Theory of Normal Production and Theory and Methods of Introduction of Gas and Air for Increasing Recovery."

S. F. Shaw of the Roxana Petroleum Corp., talked on "Gas Lift Flowing of Wells in the Mid-Continent District." which was followed by short papers in the form of discussion by R. P. McLaughlin, Hollis P. Porter of the Gypsy Oil Co., and H. K. Hutchcraft of Clark Brothers. Mr. Porter in introducing his remarks emphasized the fact that the importance of pressure control of gas in new fields was only just being realized and that as yet there is little data on the subject of a definite character.

A joint paper by C. E. Beecher and I. P. Parkhurst of the Empire companies on "Effect of Dissolved Gas Upon the Viscosity and Surface Tension of Crude Oil" was very generally discussed and Mr. Beecher, who presented the paper was called upon to answer a host of questions fired at him from every side. Incidentally Messrs. Beecher and Parkhurst were complimented on the excellence of their paper.

Gas and Oil Ratios

C. V. Milliken gave a very interesting talk on "Gas and Oil Ratios as Related to the Decline of Oil Production." Mr. Milliken had a number of graphs which were projected from a stereopticon, and from the data on these he made his talk which cited many instances in the Mid-Continent and other fields of the variableness of ratio of gas to oil in new and in old wells. In the majority of cases it was shown that the falling off in oil production was in greater proportion than the decline in the gas curves in the same wells or group of wells, but the graphs also showed the wide variations between wells in one field and those in another. The observations in some cases had been made over a considerable period of years.

Unit Operation

James O. Lewis of the firm of Dunn & Lewis, pioneers in the application of air and gas to sands to increase production in old fields, talked on "Advantages of Unit Operation in New Pools." Mr. Lewis drew a laugh when he admitted that his paper presented the theory of the thing and that he was leaving it to others to "bell the cat." The paper dealt with the development and operation of oil pools of perhaps numerous ownerships, under one management so as to make possible the application of the best principles of business engineering and science.

F. W. DeWolf of the Humphreys Corp., gave it as his opinion that unit operation was not practicable in prospective and new pools. He believed it would be a very difficult thing to induce a lot of oil operators to go in on a co-operative basis and he thought it might be even harder to get the royalty owners together and that it gave opportunities to unscrupulous lawyers to find excuses for expensive lawsuits.

Phillip Kates, Tulsa attorney was asked by Chairman Fohs to present his views on the subject from the standpoint of the legal profession and Mr. Kates had some fun at the expense of the previous speaker in a witty address on the part lawyers might take in helping to solve the unit problem. Mr. Kates quoting the recommendation of the Federal Oil Board that petroleum engineers and petroleum lawyers confer on the subject and frame legislation that would make unit operation possible, gave it as his opinion that this recommendation was commendable. He was followed by James A. Gardner of the Gardner Petroleum Co., who told of four oil companies who were now engaged in a unit operation of a wildcat territory, along the lines recommended by J. O. Lewis' paper. He did not name the companies or the territory in which they were operating. Dr. Van der Gracht and Earl Oliver of Ponca City took part in the discussion.

Discuss Old Fields

Tuesday's session was devoted to the discussion of salvaging oil in developed pools and to improved drilling and production methods. H. C. O. Clarke, Pure Oil Co.; E. O. Bennett, Marland Oil Co.; A. A. Beard, Tidal Oil Co.; L. L. Brundred, National Supply Co.; Ben E. Lindsly, United States Bureau of Mines; Dr. W. T. Thom Jr., United States Geological Survey; C. H. M. Roberts, William S. Barnickel & Co.; Stanley C. Herold, Stanford University; Harry Edwards, Humble Oil Co.; H. B. Hill, United States Bureau of Mines; Joe H. Russell, Gulf Production Co.; John R. Suman, J. R. McWilliams, Skelly Oil Co.; E. J. McKee, Phillips Petroleum Co.; and Max Bauer of the Midwest Exploration Co., were on the program.

The closing event on the program was the banquet given Tuesday evening by the Mid-Continent Oil and Gas Assn. in the Crystal ballroom of the Mayo Hotel, which was addressed by Judson C. Welliver, director of public relations, American Petroleum Institute and Glenn Griswold, editor of the Chicago Journal of Commerce.

Trips to the Wewoka, Seminole and other fields were taken on Wednesday by those who wished to study modern production methods at close hand.

PETROLEUM SHORTAGE PREDICTION PARALLELED IN OTHER PRODUCTS

By Judson C. Welliver.*

Director of Public Relations, American Petroleum Institute

There have been periodical panics lest our supplies or iron, coal or lumber should be exhausted. But discovery and invention have invariably found a way to new supplies or better substitutes. So, in a time when invention is turning out new wonders at an unexampled rate, we may safely assume that the problem of petroleum will be solved, as these others have been, through the operation of sound economic processes.

To say this is not to thrust aside and ignore the concern of those who believe we should make the best use of our resources of petroleum. The industry is ready and anxious to conform its methods and processes to whatever sound policy assures best results in the public interest. Certainly, an industry in which this country leads the world, and in which $10,000,000,000 of our national wealth is invested, could not reasonably be regardless of its own future. Who could be expected to have a more acute concern to assure petroleum supplies than the industry whose investment, whose manifold activities, whose very life, depends upon those supplies? The men of this industry will not starve themselves to death for the poor satisfaction of compelling their neighbors to miss a meal or shorten their motor trips.

Moderation of Oil Board

Believing firmly that established economic law must provide a sure safeguard of the public interest in such a situation, we may rejoice to note the broadminded view that is presented in the recent report of the Federal Oil Conservation Board. The public, the industry, and the Board are all entitled to congratulation that no extreme proposals have been seriously put forward in the preliminary report. Rather, the board has recommended various simple and commonsense measures, most of which have already been adopted by the industry, or would be if legal barriers against them were removed; and the Board advises removal of these barriers. It urges co-operation within the industry, and between the industry and the Government, for better recovery and more effective utilization of petroleum. And as to all these things the Board declares that "the major part of the measures that must be taken to protect our future supplies must rest upon the normal commercial initiative of private enterprise."

Avoiding Experiment

This is a recognition of the industry's ability to find and then to follow the right course. Beyond that, it is an evidence of purpose to avoid drastic, revolutionary or paternalistic programs. Such an assurance is doubly gratifying. It not only warrants this particular industry in hoping for a reasonably free hand in working out its own destiny, but it is bound to be regarded as an earnest of moderation, reasonableness and conservatism in governmental attitudes toward business generally.

There is every reason why we should wish our petroleum supply to serve us as long as possible, and should adopt our industrial methods to that end. But we should not urge upon our generation a kind of conservation which only the miser would understand.

Tomorrow may not need our petroleum; and if it does it may discover that it has more than it needs. Our duty, in the light of our present knowledge and understanding, is to use it with reason and moderation, to apply the most effective methods of recovery, refinement and utilization, and to avoid parsimony that, by paralyzing effort and preventing progress, might easily produce disastrous consequences.

As one considers the moderate recommendations of the Oil Conservation Board, it is impossible to avoid the impression that that body must also have taken pretty careful account of the last half century's experience with various forecasts of disaster. It is not many years since if population went on increasing, it would presently get ahead of the cotton supply, and folks would have to revert to the sartorial fashions of the fig leaf epoch.

Right at this point comes in an impressive parallel between the textile and

(Continued from Page 32)

*Before Mid-Continent Oil and Gas Association, Tulsa, Okla., October 12.

MID-CONTINENT SELECTS EXECUTIVE COMMITTEE

The executive committee, Kansas-Oklahoma division, of the Mid-Continent Oil and Gas Association for 1927 has been selected as follows: W. C. Abrams, Noble Oil & Gas Co., Tulsa; G. D. Almen, Winona Oil Co., Tulsa; J. W. Bates, Reiter-Foster Oil Co., Tulsa; Guy Berry, Big Brother Oil Co., Independence, Kans.; Burdette Blue (exofficio) Indian Territory Illuminating Oil Co.; George S. Bole, Tulsa, Okla.; J. H. Boyle, Chestnut & Smith; Robert H. Bradford, El Dorado, Kans.; John H. Brennan, Victor Oil Co.; Frank Buttram, Buttram Petroleum Corp.; Fred Cooke, Prairie Oil & Gas Co.; Louis Campbell, Magnolia Petroleum Co.; H. H. Champlin, Champlin Refining Co.; J. K. Cleary, Marland Oil Co.; H. N. Cole, Pure Oil Co.; Burt H. Collins, Echo Oil Co.; James K. Crawford, Brothers Oil Co.; William N. Davis, Bartlesville; J. C. Denton, Mid-Continent Petroleum Corp.; A. L. Derby, Derby Oil Co.; Murray Doan, Tulsa; George A. Dye, H. F. Wilcox Oil & Gas Co.; T. T. Eason, Healdton Oil & Gas Co.; W. W. Fleming, Mid-Kansas Oil & Gas Co.; W. C. Franklin (ex officio), Tidal Oil Co.; Wirt Franklin, Ardmore, Okla.; C. L. Freeland, Roland Oil Co.; E. J. Gorman, Shaffer Oil & Refining Co.; John S. Griffin, Sr., Griffin Production Co.; R. A. Griffith, Sinclair Oil & Gas Co.; H. B. Gutelius, Continental Supply Co.; C. C. Harmon, Nowata, Okla.; J. H. Hill, The Texas Company; F. B. Howland, Kewanee Oil & Gas Co.; Titusville, Pa.; J. A. Hull, Hull Co.; P. J. Hurley, Gilliland Oil Co.; W. L. Jeffords, Chelsea, Okla.; R. C. Jones, Cushing, Okla.; R. A. Josey, Josey Oil Co.; John H. Kane, Phillips Petroleum Co.; Dana H. Kelsey, Prairie Oil & Gas Co.; W. L. Kistler, Kistler Oil & Gas Co.; A. M. Landon, Independence, Kans.; E. B. Lawson, Nowata, Okla.; J. M. Lovejoy, Amerada Petroleum Corp.; Pat Malloy,

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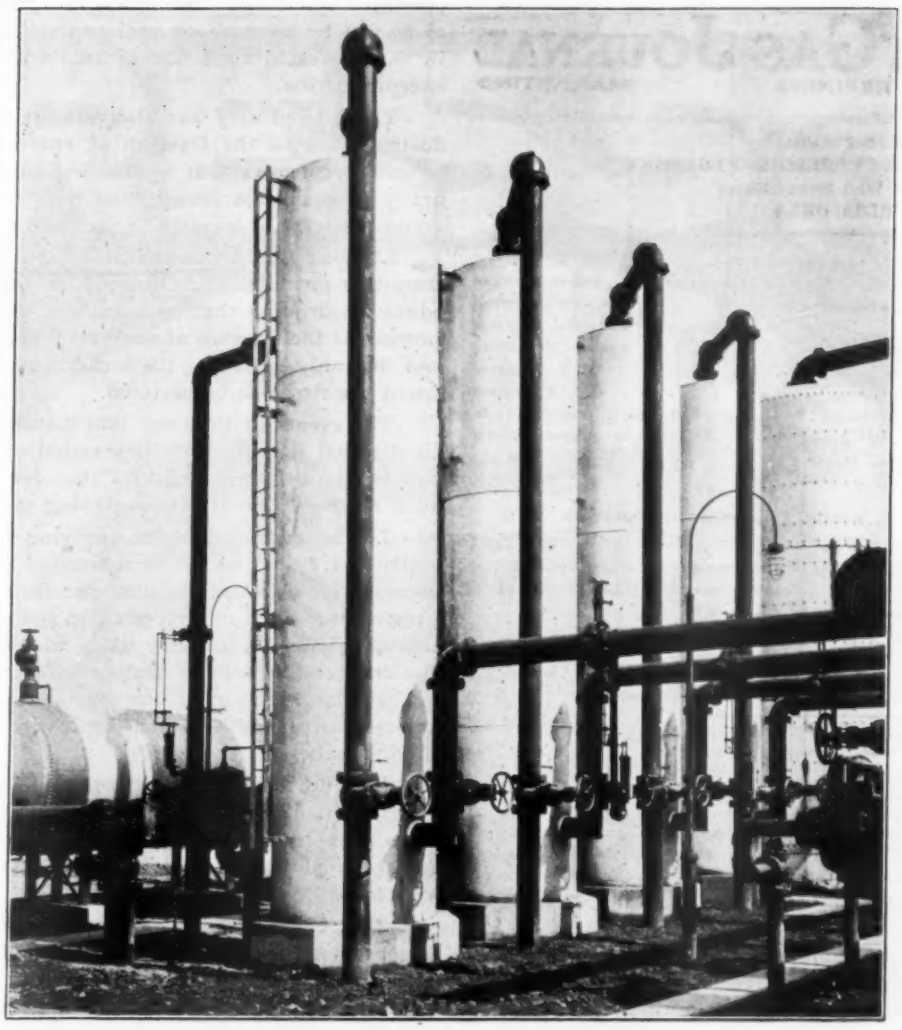

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Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.

Established as an International Publication in 1910 by Patrick C. Boyle

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TERMS OF SUBSCRIPTION
(By Mail, Postage Prepaid)

Single copies - - - - - - - - - $ .15
Three months - - - - - - - - - $2.00
Six months - - - - - - - - - - $3.00
One year (in United States) - - - $6.00
One year (in Canada) - - - - - $7.00
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PRACTICAL SERVICE

Speaking of the Pipeline Number of The Oil and Gas Journal, a leader in the oil industry said: "I never before appreciated so fully the practical service that your publication is rendering to the industry at large. The compilation and presentation in assembled form of the facts and information about crude oil transportation has provided the industry with something it has never had before and which will be of constant value and helpfulness in our daily work, no matter what branch of the industry we are serving."

While proud of that achievement The Oil and Gas Journal must repeat its acknowledgments for the indispensable assistance given by oil companies and individual oil men throughout the country in the collection of the information presented in the Pipeline Number. This was the more remarkable because the competitive conditions within the industry might naturally be supposed to discourage the publication of details that might aid rivals. In fact, a good deal of surprise was expressed in oil industry circles at the extent of the details about various companies revealed in the Pipeline Issue, details that would have been unobtainable except from the direct sources of information.

The fact that these details were placed freely at the disposal of The Oil and Gas Journal for publication in that issue is in itself a remarkable tribute to the confidence which The Oil and Gas Journal enjoys among the leaders in the industry. As one of them expressed it in offering co-operation in this matter, "The Journal is doing a mighty valuable work in educating the industry to see itself as a whole. Anything we can aid in that work will be of benefit to all of us in the business."

This recognition of what has been the persistent effort of The Oil and Gas Journal for several years is of course gratifying but the effects of that work in freer co-operation between the various branches of the business and the influence of that feeling of solidarity of interest upon the operations of the industry in meeting conditions of overproduction of both crude and refined products are best illustrated in the improving position of the oil business in the past two years.

It is not too much to say that without that growth of the co-operative spirit and the mutual recognition of common problems to be met by common counsel and action we might easily still be in the depressed condition of 1923 and 1924 caused by unheeded overproduction.

The oil industry has always been an intensely individual industry based on the freedom of operators to operate where and when they pleased. Out of that individualism there followed naturally irresponsible competition with the thought that every one could take care of himself, "a fair field and no favor."

Early in 1923, when the first flood of overproduction resulted from that attitude, The Oil and Gas Journal began a campaign of education arguing that no branch of the industry could afford to prosper at the expense of another, that all suffered in the long run and that only by taking the broad view of the industry as a whole could the situation be bettered.

The events of 1923 and 1924 demonstrated these arguments so vividly that they made an impression on even the most indifferent and by the beginning of 1925 the idea of co-operation had made such headway that it was beginning to have an effect.

The beneficial effects of applying co-operation in counsel and action were so clearly demonstrated in 1925 that the industry entered 1926 in better position than for six years. The course of the present year has further cemented the idea and there are very few individuals in the industry today who do not subscribe heartily to the co-operative idea in dealing with the problems of the business as they rise, not as questions to be decided on immediate individual interest but as problems to be dealt with on broad general principles affecting the whole industry.

It is no longer thought that any individual can do something contrary to the general advantage and "get away with it." There have been too many cases where they failed and fell under the general misfortune that befell the industry through their misguided courses.

This change in viewpoint, as the leader quoted expressed it, has been due largely to the industry being educated to see itself as a whole, a work in which The Oil and Gas Journal has devoted time and energy tirelessly, in season and out of season.

The refiners' side of the case has been spread before the producers and the producers' side before the refiners. Both their sides have been put before the distributors and the problems of the distributors have been explained to producers and refiners until all could see that the problems of one were in large degree the problems of all.

That general exposition of the industry's workings would, of course, have been incomplete without some such presentation of the part the pipelines have played in the building up and operation of the industry. This was the basic idea behind the conception of the Pipeline Number of The Oil and Gas Journal of October 7, the largest periodical devoted exclusively to the oil industry ever printed.

Monumental as it was, dealing with every aspect of pipeline construction and operation, whole libraries might be written about the development of the crude oil transportation system in North America. The subject is far from exhausted.

The keen interest shown by oil men in all branches of the business in the Pipeline Number demonstrated how appreciative they were of information about this branch of the industry. The same interest has been exhibited in regard to other Numbers dealing with other branches, proving the widening interest in obtaining information about what the other divisions of the industry are doing.

This is a wholesome sign of solidarity, promising further co-operation in the future in meeting the problems of the industry as they arise.

The oil industry is so big that it was in danger of being disastrously divided by inter-industry competitions and rivalries. That danger is, we believe, being averted.

The highest efficiency within the industry and the most effective protection against outside interference can be obtained only by the progress of understanding about the unity of the whole business. The Pipeline Number of The Oil and Gas Journal will be worth while as it contributes to this result.

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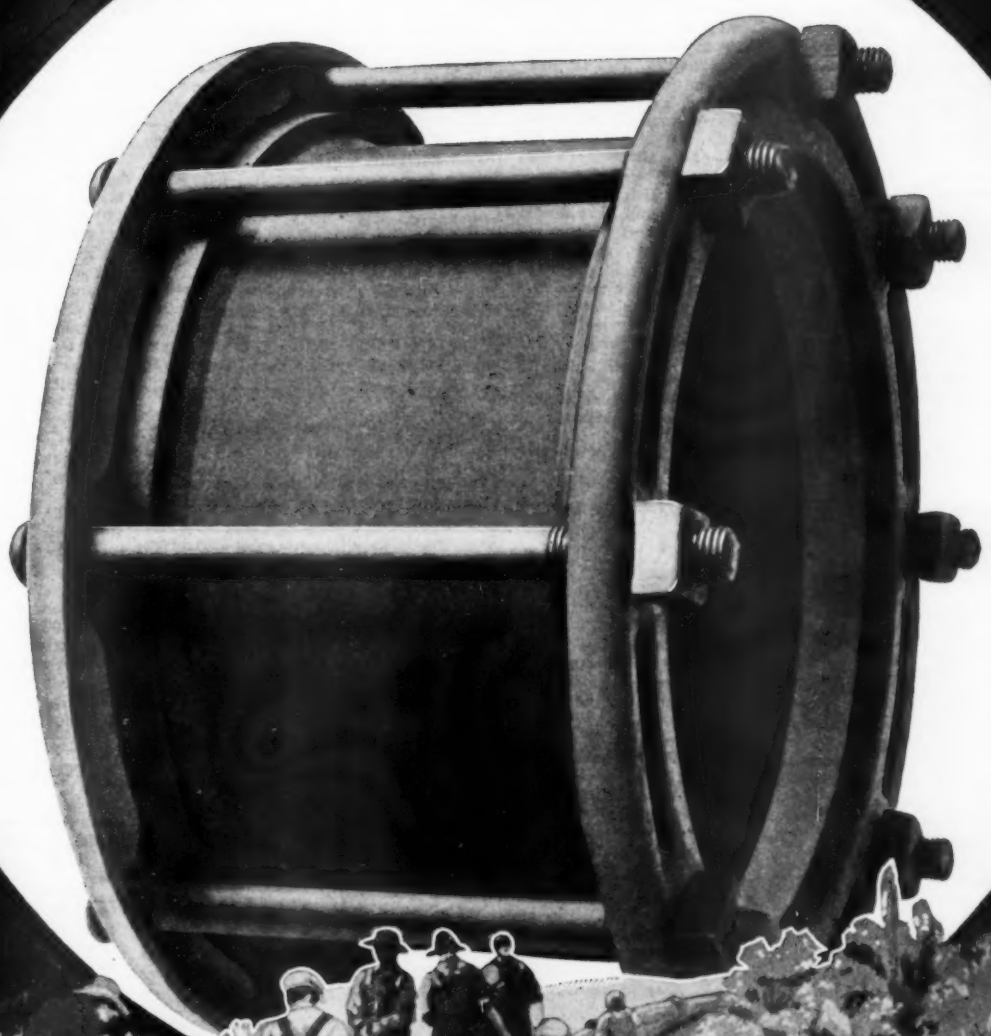

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COUPLINGS DOMINATE

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

The Question and Answer Department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

VOLATILITY OF GASOLINE AND STARTING

Are the specifications for motor gasoline covering the initial boiling point and the 20 per cent fraction considered to be sufficient to secure easy starting of the motor?—P. H.

It must be remembered that the initial boiling point set at 131 Fahrenheit and the 20 per cent point at 221 Fahrenheit are maximum temperatures. Consequently the refiner usually makes a gasoline which is better in this respect, in fact, the better grades have an initial closer to 100 Fahrenheit than to 131 Fahrenheit. A product which would be very close to the specification would not be found so satisfactory as one containing large quantities of the more volatile fractions. Motor adjustments have much to do with this question.

The subject of starting volatility has been investigated by T. S. Sligh, physicist of the United States Bureau of Standards, and the following are his conclusions.

In starting an auotmobile engine at low temperatures it is necessary to supply relatively large quantities of fuel in order that a sufficient quantity of the more volatile components of the fuel which will vaporize under the starting condifions will be available to form an air-fuel vapor-mixture which will explode. To be enabled to speak in concrete terms, the following data are assumed:

(1) A 20 to 1 air-fuel mixture (0.05 fuel-air) is the leanest which can be ignited in the engine.

(2) This leanest explosive mixture is independent of the total pressure on the charge within the range encountered in engine operation.

(3) Evaporation takes place in the manifold and cylinders at a pressure represented by the pressure in the manifold.

(4) A 2 to 1 air-fuel mixture (0.5 fuel-air) is the richest which it is feasible to supply, short of direct priming, for starting.

Assumptions (1) and (2) probably are essentially correct, but assumptions (3) and (4) may be open to question. It is possible to supply almost any air-fuel mixture by suitable construction, of course, but it may not be expedient to exceed a certain richness on account of choking the engine with an over-rich mixture after one or two explosions. The correctness of these assumed data affects only the numerical results predicted from the volatility-test data; any other suitable data could be assumed regarding operation without effect upon the method of interpretation.

With a 3 to 1 air-fuel mixture applied, it is apparent that 15 per cent of the fuel must be evaporated to give a 3.00 to 0.15 = 20 to 1 resultant air-fuel vapor mixture. He shows that 15 per cent of the fuel is evaporated in a 3 to 1 mixture at one atmosphere at 35.6 degrees Fahrenheit. However, engines usually are started with the throttle almost closed, giving a reduction of pressure in the manifold; so, if we consider the ½-atmospheric condition, the temperature is 14 degrees Fahrenheit, 15 per cent on the 6 to 1 mixture.

When making tests with the pure hydrocarbon octane he found that a 20 to 1 mixture was obtained at 57.2 Fahrenheit with a pressure of one atmosphere, while for ½-atmospheric pressure the temperature was 37.4 Fahrenheit. Thus, starting with a pure substance differs from starting with gasoline in that enrichment cannot be secured by an excess supply of fuel.

The temperatures at which some pure hydrocarbons will give 20 to 1 resultant air-fuel mixtures at atmospheric pressure are as follows:

Substance—	Normal Boiling Point Deg. Fahr.	Temp. to Give 20 to 1 Mixture Deg. Fahr.
Ethyl Alcohol (C_2H_5OH)	173.3	49.1
Benzol (C_6H_6)	175.3	12.2
Toluol (C_7H_8)	230.9	48.2
Hexane C_6H_{14}	156.2	—9.4
Heptane (C_7H_{16})	209.1	30.2
Octane (C_8H_{18})	256.3	58.1

The data shows why the addition of considerable quantities of benzol to gasolines, although improving the total volatility, often does not have a desirable effect on starting characteristics at low temperatures, since part of the more volatile compounds, hexanes and pentanes are replaced by the less volatile benzol, benzene and toluene. The undesirable effect should be especially marked where such blends are made up to have the same average volatility as the unblended fuel.

CRACKING OF WAX

Why is it that wax is cracked in an ordinary still for the formation of crystals and yet the same material, for instance the lubricating oil cut from the crude, is said to give a good yield of gasoline in pressure stills?—E. G. D.

When the crude is being reduced under atmospheric pressure and at comparatively low temperatures, there is a tendency for the wax fraction to separate in the noncrystalline or amorphous condition. Slow running of the still with large quantities of bottom steam make a favorable condition for the formation of the amorphous wax. When the quantity of steam is reduced and the contents of the still are rapidly distilled the distillate does not lose its viscosity and the wax is more crystalline. This is known as cracking for crystalline structure and gives a stock which will press more satisfactorily with a yield of better wax together with higher quality lubricating oil.

The conditions in a cracking still are much different. When the oil containing amorphous wax is charged to the pressure still, advantage is taken of the fact that the comparatively large molecule, paraffin wax, is easy to divide or crack into products having lower molecular weights, and gasoline is one of the products containing substances which have comparatively small molecules. Complete conversion of amorphous wax to gasoline is not accomplished in all cracking processes. There will be no wax in the residual oil if cracking is carried to completion in the pressure still.

FLOW OF OIL THROUGH PIPE

What are the conditions to be considered in calculating the capacity of pipe for the transportation of oil? Is there a simple formula for calculating this?—N. C.

There are so many variables which have to do with the capacity and rate of flow of oil through pipe that no simple formula could be devised which would enable one to make an exact determination of capacity for any given size of pipe. All of the prominent properties of the oil should be considered; these include temperature, gravity, viscosity, pour and quantity of water or sediment that may be in the oil. There are additional factors concerning the possible variations in the size of the pipe and the nature of the interior surface.

Probably the most complete discussion of the flow of oil in pipes ever presented is the article, "Fluid Flow and Friction in Pipelines," by William G. Heltzel, which appeared in The Oil and Gas Journal for October 7, 1926.

GRAVITY SCALES FOR PETROLEUM PRODUCTS

Kindly show the relative values of the hydrometer gravities in terms of specific gravity, Baume gravity and the American Petroleum Institute (A. P. I.) gravity.—A. L. W.

The following table, which is based on a 10 degree difference for the Baume scale, will serve to illustrate the relative values. A complete table may be obtained from the United States Bureau of Standards.

Specific Gravity	Baume Gravity	A. P. I. Gravity
1.0000	10.0	10.6
0.9333	20.0	20.1
0.8750	30.0	30.2
0.8235	40.0	40.3
0.7778	50.0	50.4
0.7368	60.0	60.5
0.7000	70.0	70.6
0.6667	80.0	80.7
0.6364	90.0	90.8
0.6087	100.0	100.9

CONCENTRATION OF ACID FOR TREATING

What is the action of sulphuric acid when treating petroleum products and what is the best strength to use?—W. R. D.

There are numerous reasons for the use of sulphuric acid when treating the light oils, lubricating oils and wax. In a broad sense, this acid is used for picking up traces of water, gums, dirt and other organic material. It changes the composition of some organic compounds to a form which renders them more susceptible to the action of the other chemicals used in the purification. Tars are formed, which have much to do with color, that are insoluble in the presence of the acid, so are easily withdrawn after settling. Many of the mineral salts are converted to sulphates soluble in water, or when insoluble these settle to the bottom, to be drawn off with the sludge.

Economical use of sulphuric acid requires that it should be added in different concentrations at the various steps in the treating process, because for some purposes a weak acid wash is all that is needed. For the main treat, commonly called the body acid, a strength above 60 degrees is seldom advisable. Small quantities of water should be present because the action is more energetic in the presence of some moisture. The concentration of the used acid is usually between 45 and 55 degrees. The method employed for bringing the acid in contact with the product is important. Circulation is considered better than blowing.

BURNING FULLER'S EARTH

What is the purpose of burning new fuller's earth and is it known what the proper temperature should be for burning fuller's earth after it has been used?—G. H.

The temperature to which new fuller's earth, as it is received from the mine, should be heated depends upon the fineness and its general condition. The main purpose is to get rid of the small quantity of water that may be present and sometimes to burn out traces of organic material. If the water is mechanically held and in an excessive quantity a low temperature may do, say somewhat below 400 Fahrenheit; if there is only a trace of so-called surface water and the heating is for the purpose of driving off the water of composition, then higher temperatures are necessary. These are seldom above 700 Fahrenheit.

When fuller's earth is heated to very high temperatures, and especially when the particles are brought in direct contact with the flame, there is danger of fusion, with the result that a large portion will be glazed and therefore rendered inactive. Some fuller's earth has been known to contain enough lime carbonate to cause trouble in the higher temperatures. The carbonate being reduced to the oxide, and it helps to lower the melting point of the clay.

The temperatures for reburning must vary with the kind of oil, the number of times it has been burned, and the extent to which it may have been mixed with new earth. As a general rule, the temperature is not varied to a great extent for reburning, but the more the high temperatures around 1,000 degrees are avoided the longer will it be possible to use the fuller's earth.

NATURAL GASOLINE AND CASING-HEAD GASOLINE

Is there any difference between casing-head gasoline and natural gasoline?—E. T. S.

Natural gasoline is a name which has been selected for the gasoline which is produced from natural gas by the methods of compression, absorption, refrigeration or a combination of these methods, to distinguish it from the gasoline which is obtained from crude oil in a refinery.

Natural gas may be wet or dry, according to its gasoline content. When gasoline is extracted from natural gas in paying quantities, the gas is said to be wet; but when there is no gasoline present, or not more than a trace, the gas is known as dry gas. While some gas wells produce a wet gas, as a general rule the gas from a gas well is practically free from gasoline.

Most oil sands contain some gas and in a new pool this gas frequently amounts to a considerable volume. As the gas is considered to be in contact with the oil, it becomes more or less saturated with the lighter products of the oil. This oil well gas rises to the surface of the ground between the tubing and the casing, so it may be separated at the top of the well through the cap, or casing-head, which has two or more openings. The oil is withdrawn through the top opening and the gas through the side openings—hence the name casing-head gas. When gasoline is extracted from this casing-head gas it may be called casing-head gasoline, but natural gasoline is considered to be the better name.

This Improved Fuel Finds Ready Markets

Fernholtz Briquettes make perfect fuel, enthusiastically accepted by the public. These briquettes have a B. T. U. value of 15,000 to 15,500—greater than anthracite. They will not disintegrate in storage; are not subject to spontaneous combustion; can be more easily handled and shipped; are extremely durable and uniform in size. No binder is required regardless of the character of the oil-coke used.

Refineries using a modern cracking process thus are presented with an opportunity to dispose of their oil-coke residue at very attractive profit—by installing the Fernholtz Briquetting Process.

PORTER & COMPANY, Incorporated

Briquetting Engineers

Suite 718 Board of Trade Bldg., Los Angeles, Calif.

The Fernholtz Press

A brochure has been prepared completely describing the Process and we shall be pleased to send a copy.

Fernholtz Briquetting Process

Seminole and Texas Panhandle Go Up

Spindletop Production Declines, Believed to Have Passed Peak. Mississippi Well Makes 2,500,000 Feet of Gas

The finding of the Wilcox sand in the north group of wells in Township 10-6 in F. J. Searight and others' No. 3 Grayson, estimated at 4,500 bbls. daily, was a feature of the week in the Seminole Pool in Oklahoma. The pipeline accommodations in the pool are now taxed to capacity, and it will be November 1 before additional lines will be available. The Searight well will put the production of the pool at 41,000 bbls. daily. It is now predicted the peak will be much higher than 100,000 bbls.

The Texas Panhandle touched 140,495 bbls. and is expected to reach 150,000 bbls., late completions promising an increase next week. Roxana corporation's No. 1 Bivins caught fire. It was estimated at 140,000,000 feet of gas. Some 6,500 sacks of cement were used trying to shut off gas, without success.

In Fisher County, Texas, the Ideal Oil Co.'s No. 1 Martin is drilling in hard lime at 3,409 feet, with the oil show exhausted. In Ector County, Cosden's No. 1-A Connell, deepened to 3,498 feet, has 800 feet of oil in the hole. The Winkler County well of Westbrook and others, deepened to 2,809 feet, showed no increase of gas and had no oil in the hole.

The Continental-Santa Fe Cos. brought in what is rated as a 1,200-bbl. well on the Rattlesnake structure, New Mexico.

Spindletop deep sand is thought to have passed its peak. The gross for the week was a little over 79,500 bbls., and a further drop was reported Monday.

Mississippi reports a well near Amory making 2,500,000 feet of gas. Four deep tests were failures in the Louisiana-Arkansas district. A new deep sand test is planned in the Lawson area.

In Colorado, the Garmesa Dome test of the Gypsy Oil Co. is thought to promise a commercial pool.

Several additional deep zone completions were made in the Huntington Beach Field in California, and several more are being prepared for production tests or scheduled for cementing within a few days.

The Celina district in Tennessee reports a 100-bbl. producer and two of 50 bbls.

OKLAHOMA

The newest well in the Seminole Pool is the Independent-Garland's No. 4 Fixico, NW cor. SW NE Section 26-9-6. This well is flowing 208 bbls. an hour from the Wilcox sand found at 4,129-31 feet. This addition places the production of the Independent-Garland lease at approximately 18,000 bbls. daily.

The first 24-hour gauge on the F. J. Searight well in Section 33-10-6 showed a yield of 4,720 bbls. This throws open a region in the north group of wells which will immediately be drilled.

The production of the Wilcox sand wells in the Seminole Field for Monday of this week was:

Searight and others	4,720
Independent-Garland's No. 1	7,196
Independent-Garland's Nos. 2 and 3	9,075
Tidal-Osage	4,360
Indian Territory Illuminating Oil Co.	350
Carter Oil Co.	1,250
Amerada-Gardner	2,810
Mid-Continent Petroleum Corp.	2,277
Gypsy Oil Co.	1,735
Total Wilcox production	33,693

On Tuesday morning of this week, the Seminole Pool attained a new peak production due to the completion of the Searight well. The figure was 42,196 bbls. The Wednesday morning gauge will surpass this amount by about 3,000 bbls. if the Independent-Garland's No. 4 Fixico holds up.

In the Fuhrman Pool in Hughes County the Independent Oil & Gas Co. has a good well in No. 4 Davis, SW cor. SE Section 26-9-9, which touched the Papoose sand at 3,329-31 feet and flowed 36 bbls. an hour. This comes as a surprise from a section which has long been quiet.

In Pawnee County the well of Sheltz and others' No. 3 Martin, NW cor. SW NE Section 7-20-8, made 300 bbls. from what is thought to be the Silicious lime 2,570-91 feet.

NORTH TEXAS AND PANHANDLE

FORT WORTH, Tex., Oct. 12.—Gulf Production Co.'s No. 5 Worley, Section 83, Gray County, is flowing 45 bbls. hourly at 2,936 feet. The Prairie company's No. 2 Sneed, Section 26, Block 6-T, Moore County, had a small show of oil at 2,927-35 feet, drilling at 2,940 feet. Phillips Petroleum Co.'s No. 3 Patton, in Whitley Survey, Hutchinson County, made 2,500 bbls. the past 24 hours. Same company's No. 1 Whitehead, Johnson, Section 28, Block Y, made a head of 186 bbls. at 2,733 feet. Prairie company's No. 7 Johnson-A, made 4,128 bbls. in last gauge, 15 per cent water. Roxana corporation's No. 1 Bivins, Section 86, Block 46, caught fire. It was estimated at 140,000,000 feet of gas at 2,606 feet. They used 6,500 sacks of cement trying to shut off the gas without success.

In Fisher County, north Texas, Ideal Oil Co.'s No. 1 Martin is drilling in hard lime at 3,409 feet with the oil show exhausted. In Ector County, Cosden's No. 1-A Connell, deepened to 3,498 feet, has 800 feet of oil in the hole. Westbrook's well, Winkler County, at a total depth of 2,809 feet, showed no increase in gas and no oil in the hole.

The Gulf Production Co. is moving its west Texas zone office from San Angelo to Midland. Reagan County Purchasing Co. is moving offices from Fort Worth to Ponca City, leaving H. J. Cochran in charge here.

EAST CENTRAL TEXAS

MEXIA, Tex., Oct. 11.—The Nigger Creek Pool of Limestone County is still producing 12,000 bbls. daily. During the week the following wells were completed; Navarro Oil Co. and others' No. 1 Peoples, Price Survey, dry and abandoned 3,164 feet; Moss & Keeling's No. 3 Rosson, Varella Survey, sand at 2,832-46 feet, made 485 bbls; Transcontinental Oil Co.'s No. 6 Cogdell, made 330 bbls. from sand at 2,842-48 feet, No. 8 A. E. Rosson, made 380 bbls. from sand 2,833-45 feet, No. 14 Rosson, 430 bbls. from sand at 2,833-37 feet; Barkley & Meadows' No. 2 Rosson, 150 bbls. from sand at 2,833-41 feet; Godley Oil Co. and others' No. 2-A Rosson, 720 bbls. from sand at 2,792-2,803 feet (when this well was completed, No. 1-A stopped flowing); Transcontinental Oil Co.'s No. 2 Erskine, dry and abandoned at 2,825 feet; No. 12-A Rosson, 200 bbls. from sand 2,831-37 feet, and No. 13-A Rosson, 60 bbls. from sand 2,840-45 feet. There are no new locations or wells for this week in the field.

MEXICO

TAMPICO, Mexico, Oct. 8.—Apart from Huasteca Petroleum Co.'s large well in the Tierra Blanca in the south fields, already reported, the only completion worth while was Mexican Petroleum Co.'s No. 113 Conteca, in the Ebano sector of the northern fields, which came in good for 5,000 bbls. at 1,990 feet. In the Panuco district, Territorial Oil Co., No. 16 Ojital (federal zone) finished a 300-bbl at 1,705 feet.

Mexican Gulf Oil Co., drilled a dry hole in its No. 51 Chapacao (Corcovado) at 2,150 feet. National Lines' No. 63 Altamira was a duster at 2,400 feet; and the latter also applies to Rich Mex Oil Co.'s No. 6, Lot 26 Altamira, which finished dry at 2,300 feet.

In the south fields, International Petroleum Co.'s No. 53 Toteco is a dry hole at 2,270 feet; and Mexican Eagle Oil Co.'s No. 51, Lot 132 Chinampa is reckoned good for 500 bbls. at a sub-sea level of 1,628 feet.

The rains have continued steadily hence there is no improvement in field conditions from the veiwpoint of transportation.

TENNESSEE

A report from Celina, Tenn., says that J. Will Pennington's No. 1 on Mill Creek broke loose and flowed over 200 bbls. during the night and at 6 o'clock in the morning had filled a 250-bbl. tank. This well encountered the Upper Tinsley Bottom pay at 406 feet and was rated at 25 bbls., but was drilled deeper with hopes of striking a better pay, which has now been realized at 452 feet. The new well is on a structure located by J. H. McClurkin and is his fourth successful well in the new pool on Mill Creek, four miles south of Celina in Clay County. The latest strike is only about a mile and a half from the Stoll pipeline, and connection will likely be made at an early date. The lease is owned by David McGowan of Steubenville, Ohio, who purchased it from McClurkin.

OVERRULES MOTION

AUSTIN, Tex., Oct. 12.—District Judge George Calhoun overruled a motion late Tuesday in the States $50,000,000 suit for recovery of portions of the Humble oil field in Harris County and value of oil taken from it, by which Mrs. Gertrude Goldman sought to have stricken out an allegation filed by the state of collusion between her husband and other defendants in connection with the trial of the case. The trial of the main case is set for October 25, and former associate Justice W. E. Hawkins of the Supreme Court, attorney for Mrs. Goldman, is preparing a motion for continuance, while R. L. Batts, representing interests in the suit, urged that the case be tried as scheduled and not again postponed.

Preparing to Drill World's Deepest Test To 2-Mile Mark

A drilling record for the world to shoot at for years to come is the ambition of the Chanslor-Canfield Midway Oil Co., which is preparing to put its Olinda No. 96 down to 10,000 feet, if such a thing is mechanically possible. At 8,046 feet the well is already by far the deepest hole ever drilled by man, but it is not so deep that any one of several wells now drilling might not conceivably go deeper. Apparently, says the Los Angeles Times, the C. C. M. O. intends to hang up a record that will stand.

Olinda No. 96 is now standing with 4½ inch casing set on the bottom of the hole. It has been standing for several weeks. The management announced originally that it planned to plug it back by stages, testing everything in the hole as far up as 3,400 feet, where it expected to place the well on production.

Now it becomes known, and is confirmed by company officials, that a string of specially constructed 2 inch drill pipe has been ordered to go back in the hole and drill it "till she busts." Drilling officials hope to put the well down to 10,000 feet, but so terrific a strain has never before been placed on drilling equipment, and, perhaps, 10,000 feet may never be reached.

Nevertheless, with the hole in perfect condition, and casing all the way to the bottom, the company is conceded to have a fair chance to be the first to penetrate 2 miles into the earth. The principal thing that is likely to prevent this, is the possibility of a twist-off, which at such extreme depths, would present a fishing job of unprecedented difficulty. The torsion which is applied to a drill tends to twist off the bit and the lower joints of drill-pipe, and this tendency increases in proportion to the length of the drill-stem.

As far as the possibility of production at such extreme depths is concerned, geologists do not concede the company much chance. The deepening project appears to be somewhat of a sporting proposition, although the experiment undoubtedly will have great value by adding to the present knowledge of deep formations, and also to the present knowledge of deep-well drilling technique.

What may be found at greater depths in this hole, which already breaks all depth records, is wholly a matter of conjecture. Most anything may turn up. The drill is reported to have passed through 12 different strata of water on the way down to 8,000 feet, and on bottom, where there is now a cement plug, the temperature is 233 degrees Fahrenhiet. The heat is reported to be increasing at a rate of about 1 degree to each 50 feet.

DEATH OF J. C. GREGG

The death is announced in Pittsburgh, Pa., of John C. Gregg, 63, assistant general counsel for the Gulf Oil Corp. Mr. Gregg was transferred last May to the Pittsburgh office as assistant to Hugh L. Stone, general counsel, after seven years' service with the company, about five of which were at the north Texas headquarters, where he represented the Gulf Production, Gulf Refining and Gulf Pipe Line companies. He also served at Houston, Tampico and Wichita Falls.

U. S. DISTRICT COURT UPHOLDS ROOS AWARD

SAN ANTONIO, Tex., Oct. 12.—Judge Duval West in United States District Court here today sustained the findings of Henry C. King, Jr., special master in chancery, awarding Edward Roos about $1,250,000 against The Texas Company of Mexico for oil in South Field at Tampico. The court made a few minor changes. The case is a notable one involving many points and a record of 5,000 pages. An appeal will be taken.

BRITISH COMMENT ON REPORT

"What the Federal Oil Conservation Board really desires to bring home," says the London Petroleum Times, "is that American enterprises should go into foreign fields to a greater extent than heretofore; but they are already doing this in no small degree. Coming back to the report, there is no experienced oil man who will agree with the Federal Oil Conservation's findings. Six years hence America may still be 'dry,' but not its oil wells."

Find Another Gusher in Upton County

Makes 300 Bbls. an Hour, 50 Per Cent Water. Cook Ranch, Shackelford County, Extended Southeast by 500-Bbl. Well

By C. D. Lockwood
Staff Correspondent, North Texas Fields

FORT WORTH, Tex., Oct. 11.—Another Upton County gusher featured the news from west Texas during the past week, while J. S. Cosden's No. 1-A Connell in Ector County was drilling a little deeper and showing enough oil to follow the swab out of the hole in a 90-bbl. head. In the North Central Texas district, a 500-bbl. southeasterly extension of the Cook Ranch Pool in Shackelford County, more than half a mile from production, several new producers of large size in the Turbeville Pool of Archer County and a semi-wildcat a half mile southeast of the Fry Pool in Brown County, near Thrifty, were the leading developments.

The Upton County gusher referred to is The Texas Company's No. 9 King in the SE cor. SW, Section 11, Block 3½, C. C. S. D. & R. G. N. G. Survey, offsetting the well-known Hughes lease of the Dixie Oil Co. on the north. This well came in Monday morning flowing 300 bbls. an hour, about 50 per cent of which was water, from total depth of 2,150 feet with the pay just touched. Since the surface elevation is 2,517 feet and the top of the lime 1,945 feet, The Texas Company's No. 9 King is a little higher structurally than the other wells in that vicinity. It was 10 feet higher on the top of the big lime than the Dixie Oil Co.'s No. 4 Hughes and 35 feet higher on the big pay. A battery of twelve 250-bbl. tanks was already on the ground to handle this production, and other tank construction was started immediately. The Texas Company also has 37,500 bbls. of storage at its No. 1-F Union Land well, just about 3 miles southwest of the King lease, on the Crane County side of the line. No other wells are drilling on the north and east of the new No. 9 King. The Texas Company owning the entire section, with this producer near the center of the south line. The Dixie Oil Co.'s No. 6 Hughes, south offset to The Texas Company's No. 9, is apparently only an average producer at total depth of 2,181 feet, top of first pay 2,040 feet, elevation 2,520 feet.

The Wentz Oil Corp.'s discovery near Hurdle in Upton County, which created something of a sensation last week, was still in a rather indefinite stage early this week. After running 5-inch with packer at 2,194 feet and anchor packer at 2,178 feet, it was found that the packers didn't hold, and at latest report preparations were being made to run other packers. The well was flowing about 75 bbls. of oil and an equal amount of water daily from 2,272-2,331 feet. It flowed 680 bbls. of oil and the same quantity of water in the first seven days beginning on September 30.

Ector County Well

J. S. Cosden's No. 1-A Connell in southern Ector County, located in the C NE of Section 13, Block 16, Public School Lands, made a head of about 90 bbls. at total depth of 3,495 feet last Saturday while swabbing. It had 1,900 feet of oil in the hole from pay topped at 3,465 feet, the oil testing 36.7 degrees gravity at 80 degrees, making it 35.2 degrees corrected. This well seems to be situated directly on top of a subsurface ridge or buried mountain peak, as Cosden's No. 1-B Connell showed a steep dip on the top of the big lime to the west, and now the Simms Oil Co.'s No. 1 Edwards, located about 10 miles east of No. 1-A Connell, proves a still greater dip in that direction. The Simms well is in the CWL of Section 44, Block B-43, T. & P. Survey, T-3-S, and had a hole full of salt water at 3,730 feet, without ever having reached the lime. The bottom of the hole in this well has a subsurface elevation of minus 889 feet, as compared with the top of the lime in No. 1-A Connell at minus 324 feet, making the Simms well 564 feet lower already without reaching the lime.

Winkler County Disappoints

The Winkler County excitement of last week proved short lived. Westbrook and Eastland Oil Co.'s No. 1 Hendricks in the SE cor. Section 42, Block B-5, showed 1,000,000 feet of gas and about 15 bbls. of oil at 2,738-41 feet, but when deepened to 2,800 feet the gas decreased and at latest report there was no oil in the hole.

In Upton County, the Rio Grande Oil Co. staked a new location for No. 1 Estep, 300 feet each way from the SW cor. of its lease in the NE of Section 18, Block 3, M-K-T Survey.

In Shackelford County, the Tannehill Oil Co. extended the Cook Ranch Pool southeastward with No. 1 Moberly in Section 59, E. Meyer Lands. It flowed 504 bbls. when completed October 6 at 1,127-30 feet and was still holding up around 400 bbls. early this week. Several locations have been staked around it on the north and west sides.

The Fry Pool near Thrifty in Brown County received a good extension when Choate & Henshaw's No. 1 Lowe, in the NW cor. of their tract in Section 622, George Stubblefield Survey, started flowing 11 bbls. an hour at 1,300-05 feet, with 2,000,000 feet of gas. This is about half a mile southeast of production in the Fry Pool and is situated between the Fry and the Gibson-White wells.

In Coleman County, Urban's No. 1 Gray had a hole full of oil at 2,497-2,503 feet and made two flows Saturday. The 5-inch was being run to drill the well in.

In Shackelford County, the Mid-Kansas Oil & Gas Co.'s No. 1 Goodwin, situated on the south line of Section 76, B. S. Walker Land, in the southwest part of the county, had a sand at 1,560-78 feet, which bailed at the rate of 2½ bbls. an hour, but this was passed up and another sand at 1,582-85 feet was being tested.

The status of the Fisher County wildcat, Ideal Oil Co.'s No. 1 Martin-Taylor, in the NW cor. Section 113, Block 1, H. & T. C. Survey, was still undetermined at latest report, but observers are of the belief that it will make a well.

West Texas Completions

Crane County

Cranfill Brothers' No. 1 P. J. Lea, Section 15, Block 32, Public School Land, was dry and abandoned at 3,510 feet. Magnolia Petroleum Co.'s No. 2 University, Section 34, Block 30, pumped 100 bbls. at 3,004-38 feet. The Texas Company's No. 8 King was shot with 60 quarts at 2,305-49 feet, having had pay at 2,301-52 feet, and swabbed 75 bbls.; No. 7 King, with pay at 2,301-30 feet, was shot with 90 quarts at 2,304-26 feet and swabbed 80 bbls. These two wells are on the south line of Section 85, Block X, C. C. S. D. & R. G. N. G. Survey.

Crockett County

F. P. Zoch and others' No. 1 University, was dry and abandoned at 2,005 feet.

Mitchell County

The California Co.'s No. 1 J. J. Handley made 6 bbls. at 2,930-3,085 feet.

Reagan County

Big Lake Oil Co.'s No. 92 University had top of lime at 2,790 feet and pay at 2,907-40 feet. It pumped 165 bbls.; No. S-B University pumped 40 bbls. at 2,973-74 feet. Simon and others' No. 1 Walters, C SE Section 3, G. C. & S. F. Survey, was plugging to abandon at 3,110 feet.

Upton County

Humble Oil & Refining Co.'s No. 3 Burleson in T. C. Jones Survey No. 100, pumped 85 bbls. at 2,167-85 feet; No. 4 swabbed 35 bbls. at 2,160-85 feet. Kirkwood and others' No. 1 Rankin was abandoned after efforts to make it produce with a 175-quart shot at 3,820-3,930 feet failed. Total depth is 3,950 feet.

Marland Oil Co.'s No. 9 Sanger pumped 155 bbls. at 2,267-2,385 feet; No. 15 Sanger pumped 136 bbls. following a 170-quart shot at 2,200-45 feet, pay being at 2,215-50 feet; No. 23 Burleson pumped 135 bbls. at 2,120-50 feet; No. 25 Burleson was shot with 140 quarts at 2,114-45 feet and was cleaning out; No. 26 swabbed 45 bbls. at 2,138-65 feet; No. 28 pumped 130 bbls. at 2,140-2,224 feet; No. 29 swabbed 55 bbls. after a shot of 180 quarts at 2,135-75 feet, top of pay being 2,150 feet; No. 30 made 10 bbls. at 2,150-95 feet.

Republic Production Co.'s No. 4 Baker, in E. C. Grooms Survey No. 8, pumped 80 bbls. at 2,215-32 feet. Texas Pacific Coal & Oil Co.'s No. 2 Milton Sherk swabbed 60 bbls. at 2,135-2,202 feet and was being put on the pump. The Texas Company's No. 1 A. S. Burleson topped the pay at 2,154 feet and after a shot of 60 quarts at 2,157-87 feet swabbed 90 bbls.

The Gulf Production Co.'s No. 1 Sherk-D in the SW cor. NW¼ Section 5, Block 3, M-K-T Survey, pumped 57 bbls. initially at total depth of 2,288 feet.

North Central Texas Completions

Archer County

American Refining Co.'s No. 2 Turbeville-B, location abandoned. Reese Carter's No. 1 Wilson, looks good for small well, is swabbing at 1,513½-14 feet. Empire Gas & Fuel Co.'s No. 3 Parkey, made 52 bbls. of oil and 85 bbls. of salt water in 19 hours at 1,582-88 feet; No. 4 made 10 bbls. of oil and 15 bbls. salt water at 1,572-76 feet. Gates and others' No. 13 Thomas made 75 bbls. at 1,152-73 feet; No. 15 made 50 bbls. at 1,150-71 feet. Marland Oil Co.'s No. 11 Thomas made 20 bbls. at 1,158-67 feet; No. 4 Turbeville, swabbing 375 bbls. at 1,513-17½ feet. Marland, Bass & Dillard's No. 1 Perkins and others bailed 15 bbls. oil and 50 bbls. salt water at 1,763-64½ feet. Marland Oil and Kentucky Oil Co.'s No. 2 White was estimated 25 bbls. at 1,165-67½ feet. Murchison & Fain's No. 4 Logan B pumped 30 bbls. from lime at 1,116-32 feet, from hard lime at 1,132-33 feet. Petroleum Production Co.'s No. 2 Turbeville, swabbing 748 bbls. in 21 hours at 1,492-1,523 feet; No. 3, swabbing 808 bbls. in 15 hours at 1,497-1,522 feet. Plains Production Co.'s No. 1 Turbeville, swabbed 850 bbls. at 1,498-1,520 feet. Roxana Petroleum Corp.'s No. 6 Abercrombie & Taylor swabbed 225 bbls.

(Continued on Page 144)

NORTH AND WEST TEXAS WILDCATS

Week Ending October 9, 1926

ANDREWS COUNTY

Company, Farm and Location—	Remarks—
A. G. Carter & Zweifel's No. 1 Cowden, C SE Sec. 18, Blk. A-52, Pub. Sch. Ld. Sur.	Moving in material
H. Zweifel and others' No. 1 Means, C SE Sec. 8, Blk. 35, Pub. Sch. Ld. Sur.	Location
Maer & Staniforth's No. 1 W. S. Taylor, C SE Sec. 15, Blk. A-42, Pub. Sch. Ld. Sur.	Location

BREWSTER COUNTY

J. Rosenborough & Skinner's No. 1 Skinner, C Sec. 39, Blk. 4, T. & S. L. Sur.	T. D. 1,290 ft., U. R. 10 in. at 700 ft.

COKE COUNTY

Lipan Oil Co.'s No. 1 E. C. Rawlings, CNL Section 390, Blk. 1-A, H. & T. C. Sur.	Flowing sulphur water 2,700 ft.

CONCHO COUNTY

The Exploration Co.'s No. 1 Hartgrove, Blk. 240	Shut down 850 ft.
Kemper Kimberlin and others' No. 1 Schultz, NE NE Sec. 139, Blk. 72, T. & N. O. Sur.	Shut down 1,572 ft.
Culbertson Bros.' No. 1 W. S. See, NE SW Blk. 742	Drilling 1,250 ft.
Gene Mays and others' No. 1 Hartgrove, NW SW Sec. 312, Blk. A-1173	Shut down 965 ft.

CRANE COUNTY

Cooke's No. 1 Cowden, NW NW Sec. 2, Blk. X, C. C. S. D. Sur.	Location.
Cranfill Bros.' No. 1 P. J. Lea, C SW Sec. 15, Blk. 32, Pub. Sch. Ld. Sur.	Dry and abandoned 3,510 ft.
Davis Realty Co.'s No. 1 University, NE SW Sec. 39, Blk. 30, University Sur.	Location.
Duffy Bros. and others' No. 1 Cowden Bros., Sec. 65, Blk. X, C. C. S. D. & R. G. N. G. Sur.	Top sand 752 ft. drilling 1,160 ft.
Duffy Bros. and others' No. 1 Griffith, SE SE Sec. 16, Blk. X, C. C. S. D. & R. G. N. G. Sur.	Location.
W. H. Dunning's No. 1 Crier McElroy, SW NW Sec. 198, Blk. F, C. C. S. D. & R. G. N. G. Sur.	Shut down 2,710 ft.
Gulf Production Co.'s No. 1 State Lasseter, SW cor. Sec. 35, Blk. 30, University Sur.	Drilling 885 ft.
Gulf Production Co.'s No. 1 Crier-McIlroy, C SE SW Sec. 198, Blk. F, C. C. S. D. & R. G. N. G. Sur.	Shut down for storage.
Gulf Production Co.'s No. 2 Crier-McIlroy, NW SW Sec. 198, Blk. F, C. C. S. D. & R. G. N. G. Sur.	Resumed operation, lowering 6-in. to shut off 200 ft. water, 2,650 ft.
Gulf Production Co.'s No. 3 Crier-McIlroy, C SE NE Sec. 198, Blk. F, C. C. S. D. & R. G. N. G. Sur.	Shut down temporarily.
Gulf Production Co.'s No. 4 Crier-McIlroy, SW cor. Sec. 198, Blk. F, C. C. S. D. Sur.	Location.
Gulf Production Co.'s No. 2 T. J. McIlroy, C SW SE Sec. 203, Blk. F, C. C. S. D. & R. G. N. G. Sur.	Fishing two strings tools 2,165 ft.
Gulf Production Co.'s No. 3 T. J. McIlroy, SE NE Sec. 203, Blk. F, C. C. S. D. & R. G. N. G. Sur.	Shut down for storage.
Independent Oil & Gas Co.'s No. 1 E. S. Hughes, NE NW NE Sec. 86, Blk. X, C. C. S. D. & R. G. N. G. Sur.	Top salt 653, shut down 2,264 ft.
Independent Oil & Gas Co.'s No. 2 E. S. Hughes, NW NE Sec. 86, Blk. X, C. C. S. D. & R. G. N. G. Sur.	Location.
Independent Oil & Gas Co.'s No. 2 Taylor, Sec. 6, H. T. Sapp Sur.	Location.
Independent Oil & Gas Co.'s No. 3 Taylor, Sec. 6, H. T. Sapp Sur.	Drilling 1,425 ft.
Independent Oil & Gas Co.'s No. 5 Taylor,	

(Continued on Page 146)

Panhandle Output Up to 140,495 Bbls.

Another Large Increase Expected Next Week From Excellent Late Completions. Link With Pampa Pool

By C. D. Lockwood
Staff Correspondent, Panhandle Field

The Texas Panhandle Field "crossed up" the estimates and estimators during the past week by staging a mighty rally which netted one of the greatest weekly gains that the district has ever known. The total production of the five counties for the week averaged 140,495 bbls. daily, an increase of 15,810 bbls. over the estimates for the previous week. And on top of that several companies completed excellent producers during the past few days which should cause another large boost in the production figures next week.

Chief among these is the Prairie Oil & Gas Co. and Phillips Petroleum Co.'s No. 7 Johnson-A, in the SE cor. NE NE, Section 20, Block Y, which started off at 200 bbls. the first hour from pay at 2,980-95 feet and increased to 375 bbls. the tenth hour. The only fly in the ointment for Prairie and Phillips was the fact that about 15 per cent of the production is water. However, the well is rated at 4,800 bbls. and very little of this figured in the production totals for the current week. Then there is the Phillips Petroleum Co.'s No. 3 Johnson-Gordon, in the SE of Section 21, Block Y, which was listed at 30 bbls. an hour originally and later jumped to 4,200 bbls. on October 6, pay lime having been found at 2,915-25 feet. The Phillips Petroleum Co.'s No. 3 Whittenburg-Patton, situated on the north line of Whittenburg's 854 acres in the Mary Whitley Survey and a direct offset to Marland Oil Co.'s No. 1-A Whittenburg, was flowing 200 bbls. an hour after a 60-quart shot at 2,860-88 feet. J. R. Phillips & Heywood's No. 2 Smith, in the NE cor. NW SE, Section 14, Block Y, is another good one, also. It flowed 2,000 bbls. after a bridge was cleaned out following a shot of 480 quarts at 2,960-3,064 feet. Nor must the American Refining Co.'s No. 1 Weatherly, in the NE cor. NW, Section 19, Block Y, be omitted from this list. It was flowing 500 bbls. from lime pay at 2,-940-97 feet and is to be deepened as soon as sufficient storage is erected.

Marland Operations

The Marland Oil Co. also figures in the tabulation of wells which should boost next week's production materially. No. 13 Whittenburg-A, in the center of its 160-acres in the Mary Whitley Survey No. 1, was treated to a 40-quart shot at 2,975-99 feet and responded with 1,200 bbls. flowing. Marland's No. 5 Dial, in Section 1, Block XO2, north of the river, flowed 323 bbls. the first 24 hours after a shot and was agitating; No. 9 Whittenburg-A flowed 400 bbls. after a 60-quart shot at 2,973,-3,000 feet; No. 10 flowed 960 bbls. after a 40-quart shot at 2,932-48 feet, total depth 2,951 feet; and No. 11 flowed 200 bbls. following a 40-quart shot at 2,933-48 feet.

Another big one is the Midwest Exploration Co.'s No. 1 Smith-Tyrell, in the SE cor. NE, Section 12, Block Y, which was listed as a 100-bbl. completion last week in lime at 2,687-2,744 feet. By agitation and swabbing the production was brought up to 2,000 bbls. daily.

Holmes, Currie & McKnight's No. 3 Smith, NE SE, Section 12, Block Y, should be mentioned here also as it flowed 500 bbls. after a shot of 300 quarts placed at 2,705-65 feet.

To Go Above 150,000 Bbls.

A glance at the accompanying production table showing the output of various companies in the field will show why the total registered such a rise this week, and if the smaller wells are kept up to their past production standards the field should go well above 150,000 bbls. the coming week.

The Canyon Oil Co. increased from 4,800 bbls. to 11,500 bbls.; Dixon Creek Oil Co. gained 950 bbls.; Empire Gas & Fuel Co. had 6,515 bbls. this week compared with 3,440 bbls. last week, and Phillips Petroleum Co. jumped from 18,-420 bbls. to 23,005 bbls., a gain of 4,585 bbls. These are but a few of the outstanding gains.

A wildcat in Carson County seems destined to add another link to the chain from the Pampa Pool to the Hutchinson-Carson main field. It is Republic Production Co.'s No. 1 Garner, NW cor. Section 103, Block B-4, about 5 miles northwest of Roxana Petroleum Corp.'s No. 1 Bryan and about 2 miles northeast of Marland Oil Co.'s No. 1-B Burnett. It is shown on the map printed in The Oil and Gas Journal of September 30, page 25. This well had a show of oil in lime at 3,010-50 feet and was spraying 5 bbls. from another pay lime at 3,054-55 feet and was shut down for storage. Roxana Petroleum Corp.'s No. 1 Bryan, in Section 92, Block B-4, was preparing for a shot Monday.

Pampa Pool

The Pampa Pool yielded nothing of a spectacular nature this week although a number of wells are making some oil. Phillips Petroleum Co.'s No. 1 Merten, in Section 82, was shot with 300 quarts at 3,042-3,150 feet and bridged. It made a flow while cleaning out; No. 2 had 3,000 feet of oil in the hole at 3,162 feet and made a couple of heavy flows. Gulf Production Co.'s No. 1 Holmes, Section 87, had 1,500 feet of oil in the hole from sandy lime at 3,115 feet. Pure Oil Co.'s No. 1 Benton, Section 63, was shot three times, the last two being 240 and 250 quarts at 3,040-3,140 feet and it made 85 bbls. the first 24 hours after the third shot. Wilcox-Pampa Oil & Gas Co.'s No. 12 Worley & Reynolds, in Section 62, was shot with 160 quarts at 2,955-3,000 feet and flowed 175 bbls. in 13 hours. Empire Gas & Fuel Co.'s No. 1 Worley, in Section 63, was drilling at 3,022 feet and making 32 bbls. natural in 18 hours. Marland Oil Co.'s No. 1 Benton swabbed 100 bbls. while cleaning out at 3,080 feet.

The Humble Oil & Refining Co. has made an interesting location in Parmer County which borders New Mexico and is south of Deaf Smith County. The test is to be known as No. 1 Farwell and others, and is located 330 feet each way from the NW cor. of Section 2, Block Z, Township 14 south, Range 3 east, C. S. S. Survey. It is in the middle of a 30,-000-acre block which was obtained for 50 cents an acre and a 3,500-foot well.

In Dickens County, Moutray Oil Co. and Clancy English have spudded their No. 1 Blackwell; No. 1 Jones is drilling below 1,200 feet.

In Randall County, the Red Hill Oil Corp. has a rig on the ground for a new test, No. 1 J. M. Redfearn, 330 feet each way from SE cor. NW, Section 97, Block 5, H. & G. N. Survey.

Texas Panhandle Completions

Gray County

Empire Gas & Fuel Co.'s No. 1 Benton, Section 64, Block 3, was dry and abandoned at 3,370 feet, where it made salt water but there was no show of oil. Pure Oil Co.'s No. 1 Benton, Section 63, Block 3, was shot with 40 quarts at 3,100-49 feet and made 18 bbls. in 10 hours; No. 2 Benton, Section 63, Block 3, was fishing at 3,118 feet and had 200 feet of oil in the hole. Wilcox-Pampa Oil Co.'s No. 9 Worley & Reynolds, Section 62, Block 3, was flowing 200 bbls. in 16 hours, after a shot of 120 quarts at 2,969-3,000 feet, total depth 3,020 feet; No. 10, same section, was shot with 20 quarts at 3,075-95 feet and 40 quarts at 3,075-84 feet, total depth 3,100 feet and bridged. Young and others' No. 1 A. Holmes, Section 106, Block 3, swabbing 15 bbls. per hour, good gas flow at 2,995 feet. It was shot with 160 quarts at 3,-114-85 feet, total depth 3,200 feet.

Hartley County

Dorning and others' No. 1 A. C. Ashby, location abandoned.

Hutchinson County

North of the Canadian River, Phillips Petroleum Co.'s No. 1 J. J. Perkins (G. E. Martin), Section 1, topped pay at 2,870 feet and was drilling at 2,874 feet with 1,000 feet of oil in the hole; No. 2, Section 2, was swabbing 200 bbls. at 2,912-35 feet; No. 3 swabbing 200 bbls. at 2,927-48 feet. Roxana Petroleum Corp.'s No. 1 Jasper, was shot twice at total depth of 2,900 feet, making 500 bbls. and was completed as a gasser. White Eagle Oil & Refining Co.'s No. 2 W. V. Hedgecoke, Hedgecoke Survey, was flowing and swabbing 400 bbls. at 2,735-2,800 feet.

South of the Canadian River, American Refining Co.'s No. 1 J. F. Weatherly, Section 19, Block Y, flowed 100 bbls. at 2,940-97 feet. Barnsdall Oil Co.'s No. 1 Sallie Pritchard, Section 3, Block B-4, top of pay at 2,685 feet, drilling at 2,717 feet with 400 feet of oil in the hole. Canadian River Oil Co.'s No. 5 W. L. Kingsland, Section 4, Block Y, made 100 bbls. 4 per cent water, after a 40-quart shot at 2,854-66 feet, and total depth 2,965 feet. Dixon Creek Oil Co.'s No. 20 Smith, Section 14, Block Y, made 150 bbls. at 2,902-45 feet. Holmes, Currie & McKnight's No. 3 Smith, was shot with 300 quarts at 2,705-65 feet and made 500 bbls. Dan A. Japhet's No. 4 Smith, Section 11, Block Y, was flowing 100 bbls. at 2,710-82 feet and will shoot.

Lenix & Patterson's No. 2 Smith, Section 11, Block Y, made 40 bbls. at 2,770-2,840 feet, Lucky 10 Oil Co.'s No. 3 Smith, Section 11, Block Y, made 150 bbls. at 2,670-2,752 feet. Marland Oil Co.'s No. 13-A J. A. Whittenburg, Mary Whitley Survey, was shot with 40 quarts at 2,-975-99 feet and made 1,200 bbls. Matheson & Dunn's No. 1 E. B. Jones, was dry and abandoned at 350 feet. McMan Oil & Gas Co.'s No. 4 J. A. Whittenburg-Archer, abandoned location.

Phillips Petroleum and Coble Oil Co.'s No. 16 J. A. Whittenburg, Section 13, Block Y, was swabbing 100 bbls. at 2,-870-2,933 feet. Prairie Oil & Gas Co.'s No. 4-A Johnson, Section 64, Block 46, swabbed 100 bbls. at 2,915-54 feet; No. 7-A, Section 20, Block Y, flowing 200 bbls. the first hour, 15 per cent water at 2,980-95 feet; No. 17-A, Section 64, Block 46, was shot with 60 quarts at 2,733-83 feet and made 100 bbls., total depth 2,788 feet. Prairie Oil & Gas Co. and others' No. 8 M. Weatherly, Section 19, Block Y, was shot with 100 quarts at 2,985-3,036 feet and made 100 bbls., total depth 3,041 feet. Riley & Holmes' No. 2 Smith, Section 11, Block Y, was swabbing 100 bbls. at 2,755-80 feet, with total depth at 2,885 feet.

Wheeler County

Mid-Kansas Oil & Gas Co.'s No. 1 W. C. Company, Section 12, Block 27, was

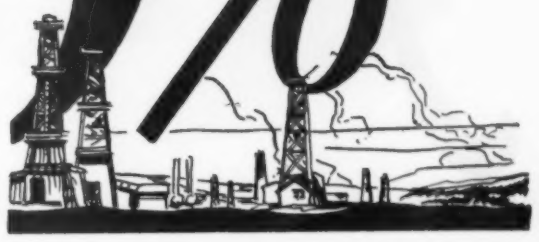
(Continued on Page 144)

WILDCAT OPERATIONS IN PANHANDLE

Company, Well, Farm Name, Section and Block—	Remarks—
ARMSTRONG COUNTY	
Red Hill Corp.'s No. 1 Puckett Bros., Section 3, Hooper & Wade Sur.	Drilling 1,780 ft.
CARSON COUNTY	
Amatex Oil Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y	Shut down 1,980 ft.
Champlin Ref. Co.'s No. 1 E. F. Bryan, Sec. 92, Blk. 4	New location.
Empire G. & F. Co.'s No. 1 Burnett, Sec. 127, Blk. 5	S. D. top pay 3,150 ft., 800 ft. oil in hole.
Gibson Oil Corp.'s No. 1 G. W. Witter, Sec. 1, Blk. 7	(Now Mound Valley Oil).
Humble O. & R. Co.'s No. 1 Burnett Acct. 3, Sec. 127, Blk. 5	Drilling 1,775 ft.
Humble O. & R. Co.'s No. 1 Burnett, Acct. 4, Sec. 12, Blk. 4	Drilling 1,990 ft.
Mound Valley Oil Corp.'s No. 1 G. W. Witter, Sec. 1 Blk. 7	Drilling 2,450 ft., 250,000 ft. gas 2,300 ft.
Navajo Oil Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y	Drilling 725 ft.
Nunn & McCauley's No. 1 E. S. Bryan, Blk. R	Shut down 2,460 ft.
Prairie O. & G. Co.'s No. 1 Deahl, Sec. 5, Blk. 5	Show oil 3,010-50 ft.
Republic Prod. Co.'s No. 1 C. R. Garner, Sec. 103, Blk. 4	Shut down 3,117 ft.
White Deer Oil Co.'s No. 1 Jordan-Brown, Sec. 114, Blk. 4	
CHILDRESS COUNTY	
Gibson Oil Corp. et al's No. 1 Smith	Shut down 2,600 ft.
COLLINGSWORTH COUNTY	
Gibson Oil Corp.'s No. 1 Williams et al, Sec. 5, Blk. 13	Dr. 1,940 ft., 5M gas 1,927-40 ft.
Harmon & Deems's No. 1 Wilson (Scott)	Location.
Martin and others No. 1 T. V. Norwood, Sec. 30, Blk. 16	Spudded and shut down.
Von Allmen and others' No. 1 McDowell, Sec. 107, Blk. 22	Rigging tools.
DALLAM COUNTY	
James and others' No .1 fee, Sec. 9, Blk. 47½	Shut down 2,870 ft.
Harry Skelly and others' No. 1 Capitol Syndicate	Drilling 315 ft.
DONLEY COUNTY	
A. T. Drilling Co.'s No. 1 F. E. Harrington, Sec. 39, Blk. 3-C	Drilling 280 ft.
GRAY COUNTY	
Archer, Blake and others' No. 1 Turneau, Sec. 111, Blk. 2-B	Spudded and shut down.
Bay Shore Oil Co.'s No. 1 C. W. Bradford, Sec. 148, Blk. 2-B	Total depth 2,666 ft.
Blackwell & McGee's No. 1 Bowers, Sec. 92, Blk. 2-B	Moving in rotary, 335 ft.
Boone Drlg. Co.'s No. 1 J. S. Mackie, Sec. 115, Blk. 2-B	Rig.
Canyon Oil Co.'s No. 1 Jackson Est., Sec. 60, Blk. 2-B	Running 8-in. at 2,365 ft.
Constantin and others' No. 1 Dial, Sec. 33, Blk. 25	Shut down 2,000 ft.
Cranfill Bros.' No. 1 T. B. Noble, Sec. 10, Blk. 6-A	Drilling 2,300 ft.
Eagle Creek Oil Co.'s No. 1 Hopkins, Sec. 66, Blk. 2-B	(Now Riley & Heck.)
H. B. Ellers' No. 1 Crews, Sec. 12, Blk. 25	Spudded and shut down.
Empire G. & F. Co.'s No. 1 Benton, Sec. 64, Blk. 3	Abandoned 3,370 ft.
Empire G. & F. Co.'s No. 1 B. Hughey, Sec. 129, Blk. 3	Underreaming 3,010 ft., 8 ft. oil in hole.
Empire G. & F. Co.'s No. 1 J. J. Wall, Sec. 161, Blk. 3	Shut down for repairs, 2,300 ft.
Jack Greenwood and others' No. 1 H. B. Lovett, Sec. 26, Blk. 2-B	Shut down 700 ft.
Gulf Prod. Co.'s No. 1 R. S. McConnell, Sec. 175, Blk. 3	Bradenheading at 3,090 ft.
Gulf Prod. Co.'s No. 1 Merten, Sec. 88, Blk. 3	
Haughn and others' No. 1 A. J. Daur, Sec. 237, Blk. 2-B	Location abandoned.
Johnson & Martin's No. 1 Fanny Holloway	Location.
Magdalene Oil Co.'s No. 1 J. E. Williams, Sec. 17, Blk. 1	Spudded and shut down.
Magnolia Pet. Co.'s No. 1 Heithholt	Running 20-in. at 250 ft.
Naboh Oil Co.'s No. 1 J. S. Morse, Sec. 68, Blk. 25	Shut down 1,915 ft.
Pampa Oil Co.'s No. 1 W. R. Campbell, Sec. 90, Blk. 3	Drilling 850 ft.
Pampa Oil Co.'s No. 1 Mary Leopold	Rigging up tools.
Phillips Pet. Co.'s No. 1 H. M. Davis	Drilling 2,015 ft.
Riley & Heck's No. 1 Mrs. J. Hopkins, Sec. 66, Blk. 2-B	Spudded and shut down.
Roxana Pet. Corp.'s No. 1 B. E. Finley, B. E. Chaney	Drilling 2,305 ft.
Slay and others' (H. Riley) No. 1 J. M. White, Sec. 212, Blk. 2-M	Shut down 315 ft.
Skelly Oil Co.'s No. 1 A. G. McKay, Sec. 175, Blk. 3	Rigging up.
The Texas Company's No. 1 C. W. Sounders, Sec. 81, Blk. 3-B	Standardizing at 2,518 ft.
Travis and others' No. 1 J. Back, Sec. 44, Blk. 25	Rig down.
Upham Gas Co.'s No. 1 W. E. Grammage, Sec. 4, Blk. 25	Rig.
Weir, Kribs & Finklea's No. 1 B. F. Talley, Sec. 114,	

(Continued on Page 148)

In the Texas PANHANDLE 60%



Of approximately 462 completed wells— *252 were shot with* ZERO HOUR

SINCE January 1st, 1926—252 Zero Hour Electric Bombs have been successfully used in the Panhandle, on approximately 60% of the 462 completed wells.

All of these 252 Bombs exploded the shot as timed, giving a satisfactory shot—a significant fact when it is taken into consideration that the Texas Panhandle is one of the most difficult fields for detonating shots, due to heavy oil and the cavey conditions found in the average well.

On Zero Hour Electric Bomb you can depend for safety, a sure shot, and protection to your well investment. The cost is too great to risk ruining the well by uncertain methods.

97% of over 2,000 Zero Hour Bombs placed in wells in the Mid-Continent and Rocky Mountain fields—under the most variable and difficult conditions of depth, pressure, etc.—have successfully and accurately exploded the shot. The 3% which *for any reason* have failed to function perfectly were replaced without charge to the user, a *Zero Hour Bomb is guaranteed to do the work.*

NAMES OF COMPANIES IN THE PANHANDLE FOR WHOM THESE BOMBS WERE PLACED

AMERADA PETROLEUM CORP.
AMARILLO OIL COMPANY
AMERICAN REFINING COMPANY
APEX OIL COMPANY
BADGER OIL COMPANY
BARNUM OIL COMPANY
BUFFALO OIL COMPANY
CANADIAN RIVER OIL COMPANY
CANYON OIL COMPANY
CENTER FIELD OIL COMPANY
COBLE-WHITTENBURG
COCKRELL-McALVANE
DERBY & HAINES OIL COMPANY
DIXON CREEK OIL COMPANY
DUNNIGAN, AND OTHERS
EMPIRE GAS & FUEL COMPANY
FLY-BLACKBURN
GATES OIL COMPANY
GIBSON OIL CORPORATION
GOLDING & PHILLIPS
GULF PRODUCTION COMPANY
HAYWOOD & McSPADDEN
J. K. HUGHES
W. L. KISTLER
J. H. LENNIX
LUCKY TEN OIL COMPANY
MAGNOLIA PETROLEUM CO.
MARLAND OIL CO. OF TEXAS
McELROY-COCKRELL
McELLROY-HERRING
McMAN OIL & GAS COMPANY
GWYNN McKNIGHT
J. H. MIDDLETON
NATIVE OIL COMPANY
NEWBY OIL COMPANY
OSBORN & CADY
PALO DURO OIL COMPANY
PATTERSON-LENIX OIL CO.
PHILLIPS PETROLEUM CO.
PHILLIPS-GIBSON OIL COMPANY
PHILLIPS, J. R.
PHILLIPS-PULASKI OIL CO.
PLAINS DRILLING COMPANY
PRAIRIE OIL & GAS COMPANY
RELIEF OIL COMPANY
ROXANA PETROLEUM CORP.
RYAN CON. PETROLEUM CORP.
SHAMROCK PET. CORPORATION
SKELLY OIL COMPANY
SKIA-TEX PETROLEUM CO.
SNELL, R. E.
SMITH, J. L., & BYNUM
SPRING CREEK OIL COMPANY
SUNBURST OIL COMPANY
SUNNY JIM OIL COMPANY
TEXAS PRODUCTION COMPANY
TEXHOMA OIL & REFINING CO.
TRAVELER'S OIL COMPANY
WARD, J. D.
WESTEX OIL COMPANY
H. F. WILCOX OIL & GAS CO.
WHITE EAGLE OIL & REF. CO.

Monthly Summary of Zero Hour Bombs used in Panhandle

January	6
February	1
March	9
April	12
May	35
June	32
July	55
August	61
September	41

Total Number of Shots in Panhandle, 252

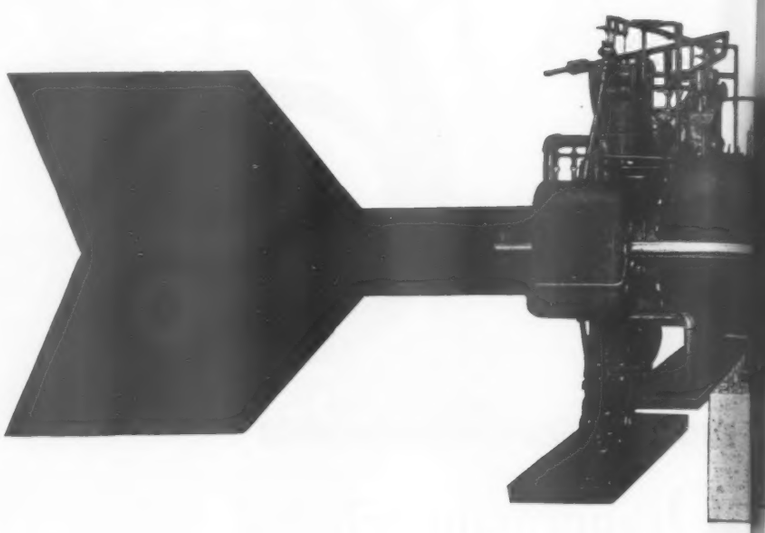
Safety—
When printed instructions furnished with each bomb are carefully followed there is no chance for injury to shooter by premature explosion.

The advice and assistance of our Engineering and shooting staff is available to oil producers on request.

ZERO HOUR TORPEDO COMPANY
710 Cosden Building, Tulsa, Oklahoma
Day Phone 2-9612; Night Phones 3-1775—3-7650—2-6097—7773
Panhandle Representative
B. A. McCall, P. O. Box 336, Borger, Texas. Phone 110.

ZERO HOUR
Electric Bomb

New—All the



In the beginning, *we could see clearly the only use to which this outfit could be put, and we worked straight to that end unhampered by any other consideration.*

There are no compromises in this engine. It is built for but one purpose—natural gas compression. This work requires full power operation over long periods of time, and everything has been done to insure it.

A notable feature of the design is that with the exception of the main frames and cam shafts, all parts that are usually made right and left hand on a twin engine have been made interchangeable, so that they can be used on either side of the engine.

A brief synopsis of the strong points of this engine follows. These should appeal to natural gas engineers.

Our Bulletin No. 410 enlarges on each of these points. If you have not received your copy, please ask for it.

MAIN FRAME: The main frame between the power and compressor cylinders is of cylindrical or pipe form, the strongest, yet lightest form in which a given amount of metal can be used. The base is strong and rigid.

CYLINDER: The power cylinders are so constructed that their inner walls are relieved from any bolting strains or stresses. The inner cylinder walls are free to expand all ways. (See bulletin for illustration of cylinder).

CYLINDER HEAD: The cylinder head is cast iron, internally ribbed for strength, and independently water jacketed.

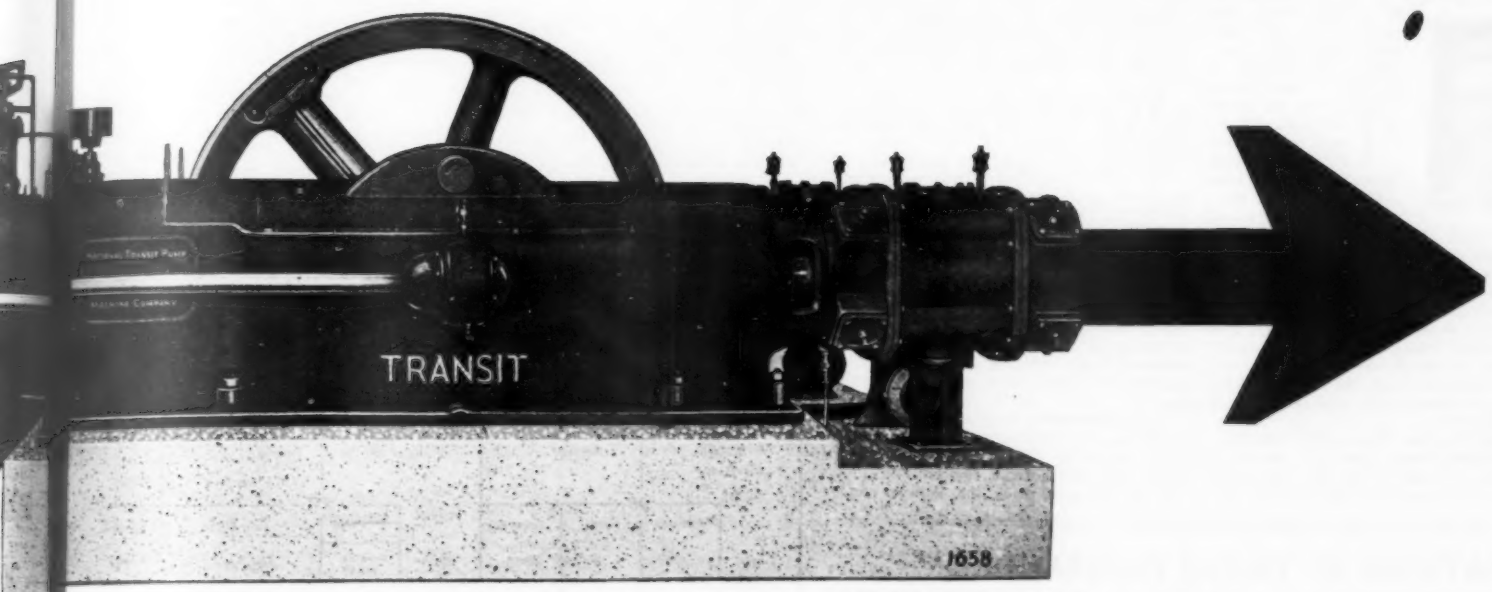
PISTON, CROSSHEAD AND CONNECTING ROD: Piston is made of cast iron, air cooled, ribbed for strength and is equipped with five American Hammered piston rings.

Main crosshead is a steel casting. Crosshead shoes are of the hinged type, adjustable for wear by means of eccentric bolts

NATIONAL TRANSIT Pump

NEW YORK HOUSTON PHILADELPHIA OIL CITY, PA.

eWay Through!



TRANSIT 17x24" Model 26, Twin Gas Engine Gas Compressor, Direct Connected, Opposed Type. Four Cycle, Single Acting, 170 H.P., 180 R.P.M.

passing through lugs on crosshead. Shoes are faced with best quality babbitt.

Connecting rod is an open hearth steel forging with a solid end for the wrist pin and a marine type box for the crank end.

CRANK SHAFT: Crank shaft is an open hearth steel forging 11½ inches in diameter throughout its length.

MAIN BEARINGS: Main bearings are of the standard quarter box construction. The bottom and side shells are steel castings, the top shell is of iron. A tie bolt is provided through the frame at each main bearing. The weakening effect of the gap in the frame for the main bearings is entirely eliminated by this tie bolt.

VALVES AND VALVE MECHANISMS: Valves are cam operated. The cam, cam levers and rollers are completely enclosed. The valve mechanism, properly adjusted, is noiseless.

STARTING: The air starting valve is operated from the same cam that operates the inlet and exhaust valves. This mechanism is housed in the same casing with the inlet and exhaust cam rollers and levers.

REGULATING VALVES: The regulating valves for the proportioning of the mixture of gas and air and for controlling the quantity admitted to the cylinder, have been designed with the greatest care. The proportion of gas and air is always uniform from no load to full load. A new arrangement insures a very homogeneous mixture of gas and air in the cylinders. This results in a quick burning mixture, permitting full expansion and insuring the highest efficiency in the use of fuel. Back firing is absolutely eliminated. A single regulating valve serves both cylinders. Each cylinder draws its charge under identical conditions, the load thus at all times, being equally distributed between the two.

LUBRICATION: Lubrication has been given very careful attention. All bearings with the exception of the fulcrum bearings of the exhaust levers are lubricated from the gravity system through adjustable sight feeds. Oil cups are used on the exhaust lever fulcrums.

High pressure lubrication for cylinders and exhaust valve stems is supplied by a pressure lubricator.

IGNITION: The engine is equipped with make and break igniters supplied with current from a five cell storage battery through a spark coil.

SAFETY STOP AND BARRING JACK: A plunger, operated by centrifugal force, in the rim of the flywheel in combination with a latch and switch, serves to break the ignition circuit when a certain speed above normal operating speed is reached. The switch is enclosed in a box with a plate glass cover and is mounted on top of the barring stand.

The barring jack consists of two pawls of unequal lengths, hung on the end of a lever in a hollow cast iron stand. When it is desired to bar the engine, it is only necessary to pull down this lever, insert a wooden handle in the socket provided and pump the engine over. The pawls are so counterweighted that they automatically engage in pockets provided in the rim of the wheel.

INDICATOR MOTION: An inclined plane mounted rigidly on each crosshead, and a removable roller and spring assembly mounted on the frame, are used for the indicator motion. This makes a perfect reduction of the 24-inch engine stroke to approximately 4 inches.

& Machine Company

TULSA CLEVELAND PITTSBURGH DENVER

We are in good shape now to supply a few of these compressors for this winter's work. Our new Bulletin No. 410 is just off the press. We will gladly mail you a copy.

Increase Estimates of Seminole's Peak

Finding of Wilcox Sand in North Group of Wells in Township 10-6 Big Factor in Ultimate Recovery

By J. L. Dwyer
Staff Correspondent, Oklahoma Fields

The Seminole Pool in Seminole County holds the spotlight in the Oklahoma oil fields, and during the past week two features were dominant. First, the finding of the Wilcox sand in the north group of wells in Township 10-6. This sand was found in F. J. Searight and others' No. 3 Grayson, NW cor. NE SE, Section 33-10-6, from 4,310-19 feet. The well is estimated at 4,500 bbls. daily.

The second feature of the Seminole Pool during the week was the crowding of pipeline facilities. The pipeline accommodations are now taxed to capacity, and from present indications it will be about November 1 before the additional lines now under construction will be completed and able to handle the production which is anticipated.

At this time the Prairie Pipe Line Co., the Oklahoma Pipe Line Co., the Gulf Pipe Line Co. and the Sinclair Pipe Line Co. have lines into the field and are taking all of the oil produced. The Ozark Pipe Line Co. and the Mid-Continent Petroleum Corp. are building lines to the pool, while all four of the companies now serving the field are constructing extra lines.

The present production of the Seminole Pool is 37,500 bbls. exclusive of the Searight well, which will place the pool at 41,000 bbls. daily.

The present oil is run as follows:

	Bbls. Daily
Prairie Pipe Line Co.	14,000
Oklahoma Pipe Line Co.	13,500
Sinclair Pipe Line Co.	7,500
Gulf Pipe Line Co.	2,000

The Prairie, Sinclair and Gulf lines are 6-inch lines, and the Prairie and Sinclair are building additional 6-inch lines, while the Gulf has an 8-inch line under construction. Until the new lines are completed it is very doubtful if many additional wells will be drilled in. The problem at Seminole is a pipeline problem.

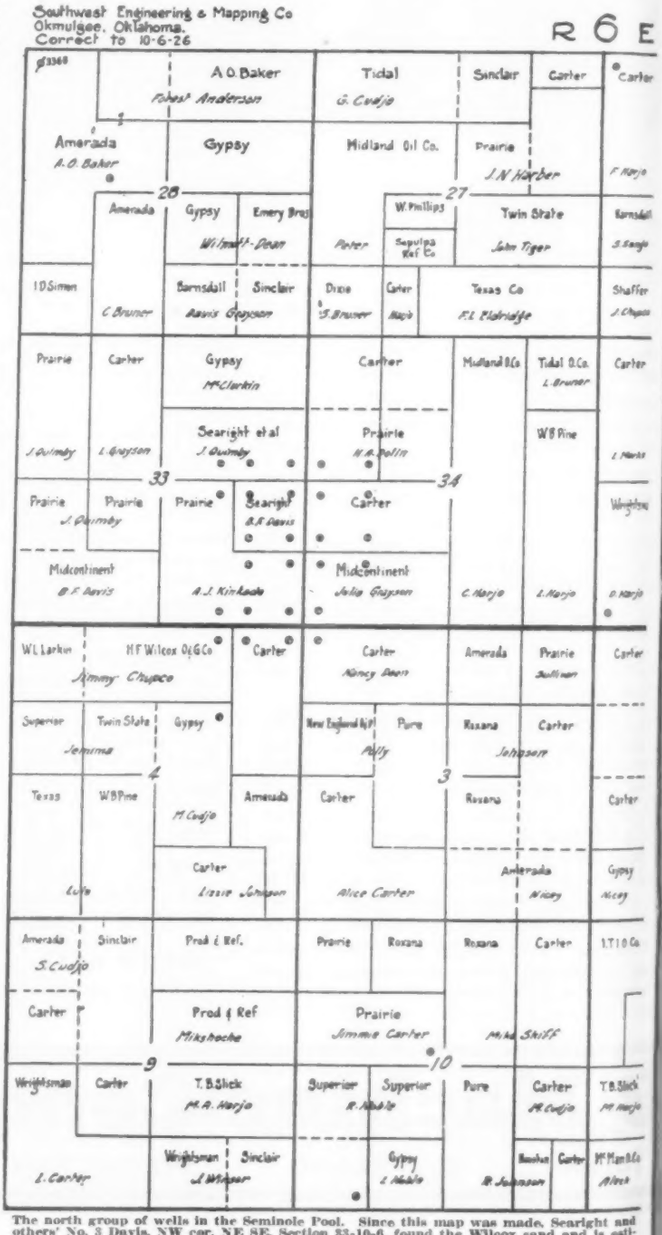
Production by Companies

On Sunday of this week, the Seminole Field produced 37,561 bbls., of which 8,732 bbls. came from the Hunton lime and 28,829 bbls. from the Wilcox sand.

The Wilcox sand production came from nine wells:

	Bbls.
Independent Oil & Gas Co. and R. F. Garland No. 1 Fixico	7,112
Nos. 2 and 3 Fixico	8,932
Carter Oil Co.'s No. 1 Carter	1,280
Mid-Continent Petroleum Corp.'s No. 1 Fixico	2,390
Gypsy Oil Co.'s No. 1 Carter	1,770
Indian Territory Illuminating Oil Co.'s No. 2 Reed	260
Tidal-Osage Oil Co.'s No. 2 Mahardy	4,350
Amerada Petroleum Corp and Gardnet Pet. Co.'s No. 1 Killingsworth	2,735
Total	28,829

The discovery of the Wilcox sand in the north end of the pool will cause a revision of estimates of the pool's peak, and it now seems assured that it will go much higher than 100,000 bbls. daily. With 40,000 bbls. coming from 31 wells and the bulk of this figure coming from nine wells, and 200 wells drilling in reasonable distance, it is evident that a major pool is in the process of development. A peak of 150,000 bbls. would not be surprising from this operation when one considers that the Independent Oil & Gas Co. and R. F. Garland have 16,000 bbls. from three wells on one lease. It is reported that a comparison of the logs of wells drilling on the Pure Oil Co.'s lease southwest of the Independent-Garland lease shows that the formations in that direction are running



The north group of wells in the Seminole Pool. Since this map was made, Searight and others' No. 3 Davis, NW cor. NE SE, Section 33-10-6, found the Wilcox sand and is estimated at 4,500 bbls. daily.

LOCATIONS IN TEXAS PANHANDLE AND NORTH CENTRAL TEXAS FIELDS

Carson County

Marland Oil Co.'s No. 1 Burnett Estate-G, 450 feet north and west of SE cor. Section 126, Block 5, I. & G. N. Survey; No. 1 Burnett Estate-F, 450 feet south and west NE cor. of south half Section 117, Block 5, I. & G. N. Railway Survey. Roxana Petroleum Corp.'s No. 3 E. F. Bryan-A, 330 feet north and east SW cor. NE, Section 92, Block 4, I. & G. N. Railway Survey.

Gray County

Boone Drilling Co.'s No. 1 J. S. Mackie, 330 feet north and west SE cor. Section 115, Block 2-B, H. & G. N. Survey. Prairie Oil & Gas Co.'s No. 7 Worley & Reynolds, 330 feet south and 990 feet east NW cor. NW Section 83, Block 3, I. & G. N. Railway Survey.

Hartley County

Amerada Petroleum Corp.'s No. 1 Frances Farwell, 330 feet south and west NE cor. Section 27, Block 16, CSS Survey.

Hutchinson County

Marland Oil Co.'s No. 1 S. B. Burnett Estate-H, 460 feet south and west NE cor. SE, Section 125, Block 5, I. & G. N. Survey; No. 1 W. S. Christian, 300 feet south and 330 feet west NE cor. M. L. Anglin Survey, No. 8; No. 2, 300 feet north and 330 feet west SE cor. same survey; No. 3, 330 feet north and east of the most westerly SW cor. of the same survey; No. 4, 323 feet south and 330 feet NW cor. same survey. Midwest Exploration Co.'s No. 2 Johnson Brothers, 330 feet north and west SE cor. south 80 acres, of the N half of Section 70, Block 46, H. & G. N. Railway Survey; No. 5, 330 feet north and east SW cor. 80-acre lease out of the same section. Prairie Oil & Gas Co.'s No. 5 Johnson Brothers-B, 990 feet north and 330 feet west SE cor. south 160 acres, Section 69, Block 46, H. & T. C. Railway Survey; No. 35, Johnson Brothers-A, 330 feet south and 165 feet east NW cor. NE Section 22, Block Y; No. 36, 330 feet north and west SE cor. NE SE Section 20, Block Y; No. 37, 330 feet north and east SW cor. west 100 acres, north 200 acres of Section 4, Block 4-B, D. & S. E. Survey. Pure Oil Co.'s No. 3 Johnson Brothers-B, 330 feet north and east SW cor. of the north half of south half of Section 70, Block 46, H. & T. C. Railway Survey. Swinney and others' No. 1 H. E. Smith and others, 330 feet south and west NE cor. NW SW Section 7, Block Y. White Eagle Oil & Refining Co.'s No. 1 Johnson Brothers-Underwood, 330 feet south and west NE cor. J. T. Williams Survey No. 1; No. 6 E. V. Hedgecoke, 330 feet north and 267 feet east SW cor. E. V. Hedgecoke Survey, No. 39, Block V, A-1,239.

WEST TEXAS

Crane County

Magnolia Petroleum Co.'s No. 1 University Land, 330 feet south and 990 feet east NW cor. Section 39, Block 30, University Land. Marland Oil Co.'s No. 1 Cowden Brothers, 330 feet north and west SE cor. Section 81, Block X, C. C. S. D. & R. G. N. G. R. R. Survey; No. 2 Hughes & Gibbs, 990 feet south and 330 feet east NW cor. Section 93, Block Y; No. 2 W. F. Durham, 330 feet south and west NE cor. Section 82, Block X, C. C. S. D. & R. G. N. G. R. R. Survey; No. 4 E. S. Hughes-C, 330 feet north and west SE cor. NW Section 85, Block X, C. C. S. D. & R. G. N. G. R. R. Survey. Prairie Oil & Gas Co. and others' No. 1 Collett, 330 feet north and east SW cor. Section 36, Block 31, University land. Simms Oil Co. and Atlantic Oil Production Co.'s No. 1 University Land, 2,970 feet south and 330 feet west NE cor. Section 39, Block 30, University Land. Ben D. Simon and others' No. 1 Brookfield Investment Co., center Section 23, Block 6, H. & T. C. Railway Survey. The Texas Company's No. 10 R. King, 330 feet south and east NW cor. Section 85, Block X, C. C. S. D. & R. G. N. G. R. R. Survey. Tidal Oil Co.'s No. 2 University Land-B, 330 feet north and 1,650 feet west SE cor Section 34, Block 30, University Land; No. 1 University Land-C, 1,650 feet north and west SE cor. Section 34, Block 50, University Land.

Howard County

Humble Oil & Refining Co.'s No. 1 E. W. Douthit, 330 feet south and east NW cor. Section 123, Block 29, W. & N.

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higher than the discovery well. Owing to the peculiarities of this region this may be discounted, as it has been demonstrated several times that sand conditions are of prime importance in this field, and structural conditions of secondary importance.

Completions During Week

During the past week, the Independent Oil & Gas Co. and R. F. Garland have drilled in another well, No. 3 Fixico, NW cor. SW NE, Section 26-9-6. This well found the sand eight feet lower than No. 1 Fixico, which was the discovery well of the pool. No. 3 Fixico had an initial production of 3,000 bbls. at four feet into the Wilcox sand found at 4,077-81 feet. The combined production of Nos. 2 and 3 was 8,932 bbls. on Sunday. Independent-Garland's No. 4 Fixico, NW cor. SW NE, Section 26-9-6, is running about 60 feet low according to calculations, and it should be drilled in within a day or so. This well has been held up owing to the lack of pipeline accommodations, and now that some relief has been secured from one of the lines it will be completed. The 60-foot drop in a quarter of a mile seems to indicate a rather sharp dip, and makes the region to the northwest look shaky, if these measurements are correct.

During the week, the Mid-Continent Petroleum Corp.'s No. 1 Fixico, in the SE cor. SE, Section 14-9-6, was drilled two feet deeper and responded with an increase of 500 bbls. daily, placing its yield at 2,390 bbls.

East of the Seminole Pool the Magnolia Petroleum Co.'s No. 1 Drewry, SW cor. SE SE, Section 18-9 7, has a good well in the Hunton lime topped at 3,987 feet. It swabbed 102 bbls. daily.

Good Well in Burbank

In the Burbank district of Osage County, the Kewanee Oil & Gas Co. has a good well in No. 2, NW cor. SW NE, Section 34-27-6. This well had the regular Burbank sand at 2,790-2,820 feet and flowed 270 bbls.

There has been a noticeable slowing up of new wildcat wells. This is according to custom. When a drilling campaign such as is now in progress at Seminole is undertaken, the companies participating are using their capital to drill rather than to purchase leases close to drilling wells, and promotion wells are having some difficulty in handling their lease sales.

The market situation is still rather shaky, with most of the pipeline companies storing oil. The Seminole Pool is conceded to be an important factor in the future of price stability.

Osage County Completions

C. O. Ross' No. 3, NW cor. NE SW, Section 20-27-11, is dry and plugged at 1,153 feet; Skelly Oil Co.'s No. 1, SE cor. Section 33-22-9, abandoned, hole full of water at 2,792 feet; Ashland Oil Co.'s No. 13, SE cor. NW SW, Section 14-23-11, had the sand at 1,625-75 feet, made 15 bbls. Kewanee Oil & Gas Co.'s No. 16, SE cor. NW NE, Section 5-22-11e, had the sand at 1,806-35 feet, shot with 60 quarts, made 60 bbls.; No. 2, SE cor. SW NW, Section 17-21-12, had sand at 1,326-42 feet, shot with 60 quarts, made 40 bbls.; No. 10, C SE SW, Section 19-21-12, is dry and plugged at 2,055 feet; Sand Springs Home's No. 6, SW cor. NW NE, Section 5-20-11, had sand at 1,700-08 feet, shot with 20 quarts, made 20 bbls.; Riverland Oil Co.'s No. 1, NW cor. SE, Section 24-20-11, dry and plugged at 2,613 feet; No. 2, SW cor. NW NE, Section 31-20-11, is also dry and plugged at 2,044 feet; Barnsdall Oil Corp.'s No. 17, NE cor. NW SE, Section 5-20-12, had the sand at 1,265-1,378 feet, shot with 300 quarts, made 30 bbls.; F. A. Gillespie's No. 7, NE cor. NW SE, Section 5-20-12, had the sand at 1,295-1,386 feet, shot with 180 quarts, made 20 bbls.

Osage County New Work

Gypsy Oil Co.'s No. 2, SE cor. Section 28-27-6, is drilling at 150 feet; C. O. Ross' No. 3, NW cor. NE SW, Section 10-27-11, dry and plugged at 1,153 feet; Phillips Petroleum Co.'s No. 13, NW cor. SE SE, Section 21-26-6, is a rig; Peters Oil Co.'s No. 1, NE cor. SW, Section 18-23-9, is drilling at 450 feet; Gypsy Oil Co.'s No. 1, SW cor. NE NE, Section 11-21-7, is drilling at 905 feet; Tidal-Osage Oil Co.'s No. 9, SE cor. SW SW, Section 15-21-12, drilling at 500 feet.

Garfield County Completions

Sinclair Oil & Gas Co.'s No. 35 Hartley, CSL SW NW, Section 18-22-3w, dry and abandoned at 2,335 feet; No. 45, C WL SW NW, same section, had the sand at 3,585 feet, made 450 bbls.; No. 34 Kisner, NW cor. Section 19-22-3w, completed in the Siliceous lime at 4,300-60 feet for 335 bbls. naturally; No. 35, NE cor. NW NW, had sand at 3,570-3,620 feet, made 90 bbls. naturally.

Garfield County New Work

Sinclair Oil & Gas Co.'s No. 9 Kessner, NE cor. SE, Section 36-22-4w, is a location; No. 38 Kisner, SW cor. NE NW, Section 19-22-3w, is also a location.

Creek County Completions

The Texas Company's No. 3 Ross, NW cor. SW SE, Section 13-19-8, had the sand at 2,197-2,216 feet, shot with 50 quarts, made 50 bbls.; Magnolia Petroleum Co. is pulling casing in No. 10 Mollie Jones, NW cor. NE SW, Section 5-18-7; Shaffer Oil & Refining Co.'s No. 13 Walker, SE cor. NE, Section 18-7-7, dry and abandoned at 2,931 feet; Gypsy Oil Co.'s No. 14 Richard, SW cor. NE NW, Section 1-18-11, had the Misner sand at 1,881-85 feet, Wilcox sand at 2,060-62 feet, producing from both sands, making 780 bbls.; Riverland Oil Co.'s No. 4 Land, SW cor. NW NW, Section 1-18-11, had sand at 1,905-11 feet, made 150 bbls.; Southwestern Petroleum Co.'s No. 3 Bruner, CEL NW NE, Section 27-17-8, had the sand at 3,098-3,112 feet, shot with 20 quarts, made 30 bbls.; E. P. Harwell's No. 2 Chisholm, SW cor. NE SW, Section 3-17-9, had sand at 2,040-79 feet, shot with 60 quarts, made 35 bbls.; Adams & Gilpin's No. 2 Wiley, CWL NW SW, Section 20-17-10, dry and abandoned at 3,007 feet; Chestnut & Smith's No. 3 Snow, NW cor. SW SW, Section 2-16-10, dry and abandoned at 2,931 feet; Producers & Refiners Corp.'s No. 1 Hogan, SW cor. SW, Section 1-14-8, had the sand at 2,408-58 feet, shot with 50 quarts, made 100 bbls.; Atlantic Oil Producing Co. has abandoned location for No. 3 Tiger, SW cor. NE, Section 16-14-10; M. P. Evans and others' No. 1-A Harjo, SE cor. SW, Section 25-24 10, is shut down at 345 feet.

Creek County New Work

Register Oil Co.'s No. 1 Murrell, SW cor. SE NW, Section 17-19-9, is drilling at 300 feet; Olean Petroleum Co.'s No. 1 Atkins, NW cor. SW, Section 13-19-9, drilling at 200 feet; Smith & Mann are spudding No. 1 Derisaw, SW cor. NE, Section 34-19-9; Superior Oil Co. is rigging up machine for No. 2 Jackson, SW cor. SE SW, Section 6-19-10; The Texas Company's No. 31 Dale, CEL NW SW, Section 5-18-7, is a rig; Smith and others are rigging up No. 1 Deere, NW cor. SW, Section 3-18-10; Sheridan Oil & Gas Co.'s No. 1 Bruner, NW cor. Section 27-18-11, is a rig; Sunray Oil Co. & Munn's No. 9 Sango, SW cor. NW, Section 6-18-12, is drilling at 280 feet; W. J. Sherry is rigging up No. 1 Bigpond, NE cor. SW SW, Section 11-18-12; March Oil Co. has rig on ground for No. 5 Bigpond, NW cor. Section 18-18-12; Alvard & West's No. 3 Freeman, CEL NW SW, Section 14-17-8, is a rig; Shaffer Oil & Refining Co.'s No. 1 Morrison, SW cor. Section 10-17-8, is a location; Roxana Petroleum Corp.'s No. 3 Bruce, SE cor. NW NE, Section 10-17-9, is running 10-inch at 574 feet; Wilcox Oil & Gas Co.'s No. 2 Lindsey, SW cor. NE NE, Section 10-17-9, is drilling at 1,150 fee; Nowata Oil & Refining Co. and others are spudding No. 2 Pemberton, NE cor. NW, Section 8-17-10; Pioneer Petroleum Co. is spudding No. 11 Bucktrot, CNL NW NE, Section 24-17-10; J. H. Wright's No. 6 Tahkaney, SW cor. NE NW, Section 24-17-10, is drilling at 300 feet; Independent Oil & Gas Co. is rigging up No. 2 Sneed, NE cor. NW, Section 30-17-10; Tim Oil Co. is building rig for No. 1 Inman, SW cor. Section 9-17-11; Misner & Reesman's No. 2 Broadnox, CWL NW NW, Section 16-17-11, is drilling at 200 feet; Joemac Oil Co. is spudding No. 1 Peters, SE cor. SW NW, Section 23-16-8; The Texas Company is spudding No. 3 Yahola, SW cor. Section 23-15-8; Magnolia Petroleum Co. is spudding No. 4 Lewis, SW cor. NE SW, Section 30-15-8; Prairie Oil & Gas Co. has rig on ground for No. 1 Bryden, SW cor. Section 31-15-8; Producers & Refiners Corp.'s No. 2 Hogan, SE cor. SW SW, Section 1-14-8, is a location and rigs are on the ground for No. 3, NW cor. SW SW, Atlantic Oil Producing Co.'s No. 1 Bear, NW cor. SE, Section 16-14-10, is a location; Quin-

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WILDCAT WELL IN KINGMAN COUNTY HAS 600 FEET OF OIL IN THE HOLE

By J. L. Dwyer
Staff Correspondent, Kansas Fields

The only unusual news from the Kansas fields during the past week was from the wildcat well of Crawford & McKenna in Kingman County. This well, No. 1 Beshare, NE cor. NW, Section 31-28-5w, is southeast of the discovery well drilled last winter by the Carter Oil Co. and Port D. Fleeger in Section 17 27-7w. The Crawford & McKenna well had sand at 4,260-61 feet and is standing with 600 feet of oil in the hole. It will be tested out.

Cowley County Completions

S. H. E. Oil Co.'s No. 2 Matney, SE cor. NE NW, Section 25-34-4e, sand at 2,155-90 feet, shot with 200 quarts, swabbing 20 bbls. of oil and 50 bbls. of water; J. A. Hull's No. 2 State Land, SE cor. NW, Section 15-32-4e, Siliceous lime at 3,273-88 feet, swabbed 375 bbls. oil and 7 bbls. of water, plugged back to 3,284 feet, first seven days averaging 195 bbls. of oil; J. A. Hull and Emerald Oil Co.'s No. 1 Wallace, NE cor. SW, Section 15-32-4e, had sandy lime at 3,260-87 feet, averaged in seven days 290 bbls. of oil and 2 bbls. of water; Marland Oil Co.'s No. 1 Graham, SW cor. NE, Section 15-32-4e, sand lime at 3,260-68 feet, swabbed 205, 367, 456, 395, 398, 520 and 534 bbls. of Oil; Roxana Petroleum Corp.'s No. 1 Rutter, SW cor. NE, Section 25-31-2e, had sand at 1,865-84 feet, made 538, 759, 849, 681 and 703 bbls.

Cowley County New Work

Sinclair Oil & Gas Co.'s No. 3 Holt, SW cor. SE SE, Section 24-33-2e, is drilling at 660 feet; J. A. Hull and others' No. 4 State Land, NE cor. NW SE, Section 15-32-4e, is a location; Marland Oil Co. is building rotary rig for No. 3 Graham, SE cor. SW NE, Section 15-32-4e.

Butler County Completions

Sheldon & Connell's No. 1 LaPorte, NE cor. SE NW, Section 25-27-7e, dry and abandoned at 2,744 feet; Ramsey Petroleum Co.'s No. 20 Harmon, CNL NW SE, Section 24-26-4e, sand at 2,620-61 feet, made 8 bbls.; Empire Gas & Fuel Co.'s No. 72 Koogler, NE cor. SE SW, Section 17-26-5e, sand at 2,478-2,561 feet, made 105 bbls.

Butler County New Work

T. C. Johnson's No. 6 Blakeman, SE cor. NW SW, Section 3-28-6e, is a location; Mid-Kansas Oil & Gas Co.'s No. 2 Blakeman, SE cor. SW SW, Section 3-28-6e, is a location; Davidson and others' No. 1 French, NE cor. SE, Section 13-28-7e, location; Phillips Petroleum Co.'s No. 2 Corn, NE cor. SW SW, Section 12-27-6e, location; White Eagle and others are spudding No. 4 Stewart, NW cor. SE SW, Section 12-27-7e, and No. 5, SE cor. NE SW, is a location. Phillips Petroleum Co. and others are spudding No. 3 Stewart, NE cor. NW NW, Section 13-27-7e; Bogle & Hawkins' No. 1 Spaulding, NE cor. Section 11-26-3e, is a location; Barnsdall Oil Corp.'s No. 1 Herman, NE cor. NW SW, Section 20-26-3e, location.

Greenwood County Completions

Continental Oil Co.'s No. 2 Wilkinson, CEL NE NE, Section 23-26-9e, sand at 2,173-81 feet, shot with 20 quarts and made 40 bbls.; Galbreath & Griffith's No. 1 Hodgson, SE cor. NW, Section 31-26-10e, dry and abandoned at 2,265 feet; Mission Oil Co. and Moore's No. 1-B Moore, SW cor. SE SE, Section 23-24-9e, sand at 2,120-38 feet, made 25 bbls.; Pollhamus and others' No. 2 Holverson, NW cor. NE, Section 26-24-9e, sand at 2,106-33 feet, shot with 40 quarts, made 30 bbls.; Mission Oil Co.'s No. 2 Holverson, NW cor. NE, Section 26-24-9e, sand at 2,093-2,118 feet, shot with 40 quarts, made 25 bbls.; Phillips Petro-

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GOOD RATTLESNAKE STRUCTURE WELL COMPLETED BY CONTINENTAL-SANTA FE

By Special Correspondent

FARMINGTON, N. Mex., Oct. 9.—The bringing in of what is rated as a 1,200-bbl. well of the same high gravity oil that has marked the other wells on the Rattlesnake structure, and the spudding in of a test well on the Chimney Rock structure which is pronounced by many geologists as one of the most promising structures on the Navajo Reservation, with increased activity in the districts off the reservation, are the principal features of development work in this field this week.

The Continental-Santa Fe companies, operating on the Rattlesnake structure, 30 miles west of Farmington, Section 3-29-19, drilling on No. 19, brought in a big producer, with an estimated 1,200-bbl. capacity, at a depth of 885 feet. This production is obtained in the lower Dakota sand, the upper sand having been cemented off while they were pushing the bit down to the lower strata which had proved a big producer in No. 17 before it was cased off. The oil is of the same high gravity as that found in the other wells on this structure, some of it running well above 70.

Two new wells have been located on this structure, Nos. 20 and 21, the first of which has been spudded in. The location of No. 20 is 1,731 feet north of the south line and 810 feet west of the east line of Section 2-29-19, at an elevation of 5,307 feet. It was drilling at a depth of 120 feet at the last report. No. 21 is located 2,103 feet south of the north line and 808 feet west of the east line of Section 2-29-19, at an elevation of 5,307 feet.

Deep Test Drilling

No. 17, the deep test, is drilling again at a depth of 3,760 feet after being delayed by the non-arrival of casing. It is getting at a depth that must be nearing the Pennsylvania formations, according to the opinions of geologists and its progress in the next week or two will be watched with increasing interest.

The Continental Oil Co., operating on the Table Mesa structure, 25 miles southwest of Farmington, Section 3-27-17, drilling on No. 10, has been troubled with water and has not yet completed the well.

Chimney Rock Test

The Marland Oil Co. purchased the lease on the Chimney Rock structure at the Navajo lease sale held last June at Santa Fe, and has contracted with the Continental Oil Co. to drill the first test well. The location for this well is on Section 34-31-17, near the township line and about 23 miles northwest of Farmington. The well was spudded in Wednesday and will run tour until the Dakota sands are reached which are believed to

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Spindletop Declines; Hull Pool Second

Pierce Junction Furnishes 1,000-Bbl. Light Gravity Producer. Four Failures at Spindletop; Four Wildcats Dry

By P. L. McGreal
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Oct. 11.—With a slump in the Spindletop Pool gross production in the Gulf Coast division fell off 11,325 bbls. compared with last week. The estimated daily average for the week is placed at 173,255 bbls. The Southwest fields also decreased 495 bbls., making the net 11,820 bbls.

Naturally the largest decrease is in the Spindletop Pool, which shows 9,897 bbls. The Sour Lake Pool declined 750 bbls., most of it being in the light gravity section. Other decreases are: Batson, 320 bbls.; Big Creek, 563 bbls.; Hull, 850 bbls.; Jennings, 105 bbls.; Lockport, 380 bbls.; Nash Dome, 287 bbls. The Boling Pool increased 300 bbls.; Edgerly, 100 bbls. Goose Creek, 205 bbls.; Orange, 100 bbls.; Pierce Junction, 470 bbls.; Vinton, 255 bbls. and West Columbia, 380 bbls.

The estimate for each pool is as follows:

District—	Gross Bbls.
Boling	2,750
Batson	1,450
Blue Ridge	1,572
Barber Hill	1,000
Big Creek	1,137
Dayton	175
Damon Mound	790
Edgerly, (La.)	825
Goose Creek	9,955
Humble	4,525
Hull	21,500
High Island	135
Jennings, (La.)	1,270
Lockport, (La.)	4,120
Markham	120
Nash Dome	513
Orange	7,825
Orchard	95
Pierce Junction	3,970
Piedras Pintas	300
Spindletop	79,603
Saratoga	1,400
Sour Lake	9,450
South Liberty	3,850
Vinton, (La.)	6,155
Welsh-Anse La Bute, (La.)	75
West Columbia	8,680
Miscellaneous	125
Total	173,255

Southwest Fields

The gross daily average for the Southwest fields is placed at 44,970 bbls. against 45,465 bbls. for last week. The estimate for each field is as follows:

Field—	Daily Avr.
Luling	21,250
*Mirando	17,310
Somerset	2,060
Rockdale-Minerva	940
Lockhart, (Lytton Springs)	3,410
Total	44,970
Grand total for week	218,225
Grand total last week	230,045

*Includes pools in Webb, Jim Hogg, Zapata Counties and Cole-Bruni district in Duval County.

Wells completed during the week total 29, of which 11 were dry and 6 salt water. Four of the failures were in the Spindletop Pool and four wildcats were abandoned. The new production aggregates 31,670 bbls.

The following table shows the results of the week's operations in the pools:

Pool—	Comp.	Prod.	Dry	Sw.	Big.
Batson	1	50	0	0	2
Barber Hill	1	0	1	0	0
Goose Creek	2	100	1	0	1
Hull	3	6,550	0	0	1
Jennings	2	0	0	2	0
Orange	2	25	0	2	2
Pierce Jnct.	1	1,000	0	0	1
Spindletop	8	22,175	4	2	1
Sour Lake	5	1,760	1	0	0
Miscellaneous	4	0	4	0	0
Totals for wk.	29	31,670	11	6	8

Hull Second in Output

The Hull Pool ranks next to Spindletop in the amount of new production developed during the week. Republic Production-Houston Oil Co.'s joint No. 126 Dolbear 800 acres, on the east side of the dome, was worked over at 2,275 feet and responded flowing 4,000 bbls. per day. The Gulf Production Co.'s No. 74 Phoenix, on the southeast side, came in early in the week making 2,500 bbls. at 3,450 feet. The Empire Gas & Fuel Co.'s No. 21 Barngrover, will make a pumper at 3,090 feet. The Republic-Houston Oil Co.'s No. 39 Dolbear, another workover, is bailing at 2,025 feet.

The Republic-Houston Oil Co.'s No. 136 Dolbear is drilling at 2,670 feet and No. 129 at 2,980 feet with locations made for Nos. 140 and 141. On its Phoenix lease, the Gulf company's No. 73 is drilling around 3,400 feet. Nos. 5 and 62 are being deepened. Derricks are standing for Nos. 75 and 76. No. 18 Hannah fee is at 4,235 feet, and No. 19 around 2,435 feet. The Humble Oil & Refining Co.'s No. 1 Lynd will be drilled deeper from 4,475 feet. No. 4 Hooks-Spells is idle. Locations have been made for No. 2 Lynd and No. 5 Merchant. The Texas Company's No. 1 Aremlin is drilling around 3,345 feet. The Texas Company-Vacuum joint No. 6 Hannah is around 2,045 feet. The Mecom Oil Co.'s No. 1 Seale is at 2,980 feet. The Hull Oil Co.'s No. 11 Abel is drilling at 2,065 feet. The Empire Gas & Fuel Co. has made a location for No. 22 Barngrover.

The Humble Oil & Refining Co. set and cemented 6⅝-inch casing in No. 3 Welder, on the west side of the Trinity River in the South Liberty Pool. A sand at 3,742-55 feet, showing oil will be tested. No. 4 Welder, an offset, is reported showing oil in a sand around 3,580 feet. The Gulf Production Co.'s No. 1 Beckman is drilling around 3,400 feet. Three old holes are being worked over in the original part of the pool on the east side of the river.

Pierce Junction

The light gravity section, on the north-northwest side of the Pierce Junction saline uplift, furnished a 1,000-bbl. well at 3,525 feet. It is J. F. Bashara's No. 1 Higgins. On the east side of the uplift, the Gulf Production Co.'s No. 19 Taylor is bailing at 3,950 feet.

A checkup of the production there is as follows: J. F. Bashara, 1,600 bbls.; Rio Bravo Oil Co., 1,340 bbls.; Gulf Production Co., 670 bbls.; Navarro Oil Co., 230 bbls.; Texas Exploration Co., 100 bbls.; and Humble Oil & Refining Co., 30 bbls. All except approximately 800 bbls. is coming from the light gravity section.

The Rio Bravo Oil Co.'s No. 4 P. F. Settegast is drilling around 3,765 feet. No. 5 is at 1,655 feet. No. 1-B is a location. The Gulf Production Co.'s No. 1 Jones fee is at 3,345 feet. No. 1-A Jones is around 3,600 feet. Eunice and others' No. 1 Bullock-Nash is drilling below 1,455 feet. J. F. Bashara has a location for No. 4 Bender. The Marland Oil Co.'s No. 1 Prudential is drilling around 3,800 feet. The Humphreys Corp.'s No. 1 Liggett is below 1,545 feet. The Navarro Oil Co.'s No. 1 Humble is at 3,610 feet. The Texas Exploration Co.'s No. 10 Dooley is drilling at 3,475 feet. H. R. Cullen's No. 7 Howe, on the east flank is around 3,795 feet.

Goose Creek

In the Goose Creek Pool, the Humble Oil & Refining Co. abandoned No. 10 Galliard at 3,100 feet. Same company's No. 26 Smith, a workover, is pumping 100 bbls. at 2,875 feet. The Gulf Production Co.'s No. 10 State land is bailing at 3,525 feet.

The Humble Oil & Refining Co.'s No. 68 Smith, on the east side, is drilling around 4,000 feet. Nos. 31 and 32 will be drilled deeper. No. 4 Myers is drilling around 1,765 feet. On Galliard peninsula, No. 17 will be deepened and No. 31 is now deepening around 2,140 feet. The Gulf Production Co. has a deep test, even for the Goose Creek Pool. It is No. 6 Hirsh in the shallow waters of Trinity Bay, drilling below 5,000 feet. A location has been made for No. 13 Chapman-Bryan, near the mouth of Goose Creek, from which the district takes its name. Keen & Woolf's No. 9 Schilling is drilling deeper at 2,643 feet. The Gulf Coast Oil Corp.'s No. 14 Galliard is drilling deeper at 2,816 feet. The M. & B. Oil Co.'s No. 5 Scorrgea, northwest of production, is drilling around 2,235 feet.

At Barber Hill, Chambers County, 12 miles northeast of the Goose Creek Pool, Mills Bennett Production Co.-Humphreys Corp.'s joint No. 6 fee bailed dry and is deepening around 3,336 feet. It is on the southwest side of the saline uplift. No. 2-B Kirby, on the east side, is drilling around 3,380 feet. Same interests' No. 4 Kirby, on the northwest, is showing oil at 2,317 feet. Barclay and Meadows' No. 3 Barber is in a cavity at 1,916 feet. The uplift at Barber Hill is one of the most pronounced in the Coastal Plains, rising 80 feet above the surrounding prairie.

Sour Lake

The output of the light gravity section on the southwest side of the Sour Lake Pool slumped some during the week, as shown in the weekly production column. The Humphreys Corp.'s No. 2-B Bashara came in making 900 bbls. at 3,830 feet, and No. 3 Bashara started off flowing 800 bbls. at 3,860 feet. The Gulf Production Co.'s No. 1-D McLean will pump at 3,950 feet. The Humble Oil & Refining Co.'s No. 32 Hardin is pumping at 1,725 feet. The Lake View Oil Co. abandoned No. 50 Hardin at 3,900 feet.

The Humphreys Corp.'s No. 4-B Bashara is around 3,985 feet. No. 5 is at 1,175 feet. No. 1 Giescke is around 1,765 feet. Casing was set in No. 2 Oxford-Kelly at 3,900 feet. Locations have been made for No. 1 Gordon and No. 1-G Bashara. J. F. Bashara's No. 3 fee is around 3,765 feet. The Orange Petroleum Co.'s No. 2 Merchant is at 2,375 feet. Eunice and others' No. 3 Eunice is drilling at 3,455 feet. The Texas Company's No. 304 fee is below 1,655 feet. The Gulf Production Co.'s No. 1 Cora Jackson is around 3,765 feet. No. 2 is around 3,655 feet. No. 3 is at 2,710 feet. A location has been made for No. 1 Thompson. Other locations have been made for the Lake View Oil Co.'s No. 51 Hardin; the Hull Oil Co.'s No. 1 Hunter; and for Gulf Production Co.'s No. 2 McLean.

In the Batson Pool, the Paraffine Oil Co.'s No. 6 Paraffine is pumping 50 bbls. at 1,175 feet. S. R. Buchanan's No. 97 Milhome is bailing at 1,260 feet and the Ada Belle Oil Co.'s No. 110 fee is doing the same at 1,050 feet.

The Acorn Oil Co.'s No. 61 Paraffine is at 545 feet. The East Batson Oil Co.'s

(Continued on Page 82)

Wells Completed

The following wells have been completed since the last review: Yount Lee Oil Co.'s No. 13 McFaddin, salt water. No. 14 McFaddin, flowing 6,800 bbls. No. 10 McFaddin, flowing 3,000 bbls. Gulf Production Co.'s No. 5 Roche, flowing 3,000 bbls. at 2,850 feet. No. 4 Roche abandoned at 2,860 feet and No. 5 Oakwood abandoned at 2,260 feet. No. 5-A Weed will make a pumper at 3,275 feet.

Late in the week the Rio Bravo Oil Co. brought in No. 51 T. & N. O. right of way at 3,035 feet, flowing 5,000 bbls. initial output. It is located between Nos. 2 and 4. No. 7, a workover, came back flowing 3,000 bbls. at 2,850 feet. The Atlantic Oil Producing Co.'s No. 8 McLean, another workover, is making 700 bbls. at 3,375 feet and No. 9 McLean flowing 500 bbls. at 3,450 feet.

Three holes were abandoned during the week. Ross Combat quit No. 1 Ewing at 3,350 feet. The Unity Oil Co.'s No. 90 McFaddin was plugged in salt water at 2,000 feet. The third, the Favority Oil Co.'s No. 1 Weed, a deep hole, was abandoned at 4,275 feet.

In addition to the Gulf Production Co.'s No. 5-A James Weed, rated as a pumper, other completions coming under that classification are as follows: Deep Sand Oil Co.'s No. 2 Howell will pump at 3,240 feet. Paggi & Co.'s No. 2 Gordon, a workover, will make a pumper at 3,325 feet. Ward and Wise will put No. 1 McFaddin on the beam at 3,425 feet. Paggi & Co.'s No. 3 Gordon is bailing at 4,360 feet.

Other deep holes not included in the list above are: Rush and Putman's No. 1 Hammons, below 4,370 feet, and Walker Oil Co.'s No. 1 Quinn, around 4,235 feet.

The Gulf Production Co.'s No. 6 Weed is shut down. No. 7 is at 3,144 feet.

(Continued on Page 85)

BELIEVE PRODUCTION PEAK PASSED IN SPINDLETOP DEEP SAND AREA

By P. L. McGreal

BEAUMONT, Tex., Oct. 11.—It is the consensus of opinion among those who have watched the rapid rise of the light gravity, deep sand area of the Spindletop Pool on the west-southwest side of the original cap rock section that the production peak has been reached. A rapid decline is predicted. The gross for the week ending October 9, is a little over 79,500 bbls.

Early in the week the daily output was below 78,000 bbls. Completions late in the week on both sides of the west Port Arthur road, brought up the estimated daily average for the week. The Sun Oil Co.'s No. 1 Price, one location south of production, was a disappointment. Two joints of 40-foot strainer were set at 3,468 feet and the hole bailed for two days. It is heading 175 bbls. per day, 24.8 gravity oil. The Price lease is just south of the Gulf Production Co.'s Jack-Duff lease, which was the limit of production on the south side of the district. The Magnolia Petroleum Co. is drilling No. 1 fee, about two locations south of the Price lease. It is below 3,900 feet and interest now centers there.

One month ago the Gulf company picked up a deeper sand at 4,244 feet in No. 4-A Weed and since that time efforts have been made to duplicate the success of the Gulf company without success. The Yount Lee Oil Co. has three deep tests under way, drilling No. 9 fee around 4,455 feet, No. 2 Trembley below 4,500 feet and No. 9 Gladys at 4,386 feet. On its Jack-Duff lease, the Gulf company's Nos. 3 and 5 are both below 4,100 feet. The Sun Oil Co.'s No. 3 McLean is deepening around 4,100 feet.

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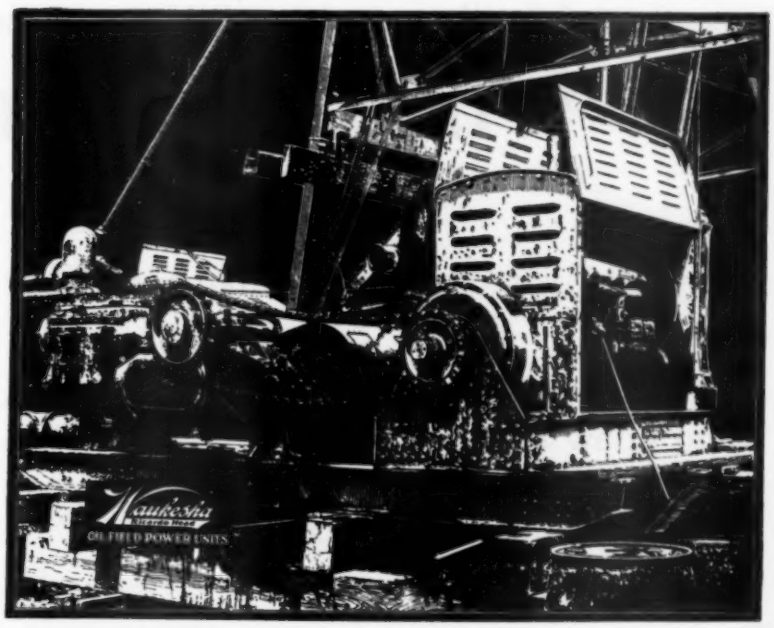

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Mississippi Wildcat from Trenton

Amory Well Making 2,500,000 Feet of Gas Seizes Attention of Louisiana-Arkansas Operators During the Week

By James H. Dameron
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Oct. 11.—Amory Petroleum Co.'s No. 1 Carter, 855 feet north and 50 feet east SW cor. SW SE, Section 7-13s-17w, a wildcat near the town of Amory in Monroe County, northeastern Mississippi, seized the attention of operators in the Louisiana-Arkansas division as proven areas in the division closed a dull week and wildcat territories lost their zest. The well blew in from the Trenton horizon at 2,478-80 feet making 2,500,000 feet of gas and making a little salt water. The well is shut down for orders. Owners were to have a meeting in Amory and decide whether to drill deeper.

As the news of the wildcat's find spread throughout the division territory interest in the area increased. Practically every major producing company in the district sent scouts and land men to Amory. Numerous independent operators from Shreveport and El Dorado were in Amory at the end of the week as well as oil men from other parts.

The well was drilled on the southwestern extension of the Cincinnati arch and oil seepages were the basic reason for its location. Three shallow geological tests had been drilled prior to making the location under the supervision of H. D. Easton, Shreveport geologist, who had made an extensive study of that territory. Judge Gillespie of Amory was the prime mover in the organization of the company named after the town in which capital was raised to drill the test. William Steinholl, an Ohio cable tool driller, was in charge of drilling operations.

Twelve and one-half inch casing was set at 601 feet and 6-inch casing had been set at 2,100 feet. The hole was being underreamed when the well came in. The bit went into the Devonian black shale at 2,100 feet and the underreamer was still in a caving shale formation when the well came in. The water is believed to be coming from around 1,700 feet. None of the casing was cemented.

Geologists who were on the location when the well came in and geologists here who are familiar with the operations there agree production is coming from the Trenton formation which produces in Ohio and Indiana. According to information from the lease the well had a slight showing of oil when the bit went through a heavy clay formation near the surface. However, the showing was very light.

About 35 miles southeast of the Amory well is the small Fayette gas field in Fayette County, Alabama. However, its production is not coming from the same horizon. In the Fayette Field the first showing is found in a sand found around 850 to 950 feet. The pay in Fayette is found at 500 feet and none of the wells there have been anything to get excited about, the largest being a 4,000,000-foot producer.

The Amory well was drilled on a tract of approximately 5,000 acres out of a 35,000-acre block. During the past year Mississippi has been looked upon more favorably by wildcatters and a few tests are being drilled there now, all far from the Amory well. The Amory well was spudded February 1.

Field Operations

Proven fields offered little in the way of excitement last week and production continues on its downward trend, falling off more than 1,000 bbls. The best well completed last week was in Smackover and it was good for 350 bbls.

The combined new production for the week was 1,260 bbls. from 14 wells, 9 in Arkansas with a combined production of 614 bbls. and 5 in Louisiana that averaged better than 100 bbls. per well. Sixteen dry holes were drilled and 4 gas wells were completed, bringing the total completions to 34.

Little change was noted in field operations. Twenty-four wells are waiting for standard rigs, 15 tests are carried as temporarily abandoned, 227 are drilling, 24 are rigs, 63 derricks are up and locations total 13.

Failure of four deep tests, three in Louisiana and one in Arkansas marked the efforts of deep sand explorers. Magnolia Petroleum Co.'s test in the Naborton district in De Soto Parish was a failure at 4,135 feet. A 3,005-foot hole near Little Bay in Calhoun, Ark., was chalked up as a duster. Gulf Refining Co.'s No. 1 Byrd, southwest of Benton in Caddo Parish was abandoned at 3,903 feet and Magnolia Petroleum Co.'s No. 1 Spell in the Pine Island district was crossed off at 3,553 feet. L. M. Emlet's Sabine Parish test was shut down at 4,070 feet. Dixie Oil Co. is preparing to drill another deep test to the Trinity horizon in Caddo Parish on the Robertshaw lease in Section 13-21-15.

One of the features of Caddo for the week was Ohio Oil Co.'s chalk rock producer flowing 150 bbls. It was No. 22 Smith, Section 7-21-14, and was completed at 1,659 feet and is flowing by heads. The well is near Gilliam. Aside from the Ohio company's well, completions in Caddo did not get out of the ordinary class.

Urania Completions

Three completions was all Urania could boast of, but one of the wells was good for 300 bbls. Field work in Uranin showed a slight increase during the week and completions in the north end of the field will probably swell the next report on that area.

In addition to coming forward with a couple of good gas wells the Monroe gas field in Louisiana was the field which was the nucleus for another big deal. H. C. Couch, Pine Bluff, Ark., utility magnate, paid $500,000 cash for one-fourth interest in the Quachita Natural Gas Co., Inc. The gas company is headed by S. D. Hunter, president, and is a part of the S. S. Hunter estate. Details of the deal were confirmed by Mr. Hunter.

The Ouachita Gas Co. owns about 30,000 acres in the Monroe gas field, scattered over the parishes of Moorehouse, Ouachita and Union. The company has about 20 producing wells and the company's daily production is approximately 40,000,000 feet of gas. It distributes gas in Monroe and Bastrop, La., through its distributing company, a subsidiary to the producing company. In addition it supplies gas to the paper mills in Monroe and a quota to carbon black plants. The deal was closed last week. In it was involved approximately 80 miles of pipelines.

Mr. Couch is heavily interested in the Arkansas Light & Power Co. and light and power companies in Louisiana, Mississippi and Memphis, Tenn.

Production slumped when fields in both states lost in daily average. Small gains in De Soto, Bellevue and Urania, could not offset the losses in other Louisiana pools. Every field in Arkansas contributed to Arkansas's fall.

PRODUCTION BY FIELDS

Louisiana	
Bellevue	2,090
Caddo light	9,735
Caddo heavy	2,445
Cotton Valley	7,580
De Soto and Red River	4,005
Elm Grove	525
Haynesville	9,385
Homer	5,600
Urania	16,700
Total	58,065
Arkansas	
Smackover heavy	117,870
Smackover light	14,145
El Dorado	6,850
Lisbon	7,800
Nevada	1,875
Stephens	1,620
Total	150,160
Total both states	208,225
Total last week	209,570
Loss	1,345

LOUISIANA
LaSalle Parish

Winn Parish made the big contribution for the Uranin Field during the week when O. W. Clark's No. 10 Harper, Section 26-10-1e, was completed in 18 feet of sand at 1,485 to 1,503 feet, making 300 bbls. naturally, 10 per cent water. Keen & Woolf brought in the other well for the field and it was on the LaSalle side. It was No. 1 Griswold, Section 3-9-1e, in the southern end of the pool, which is a 40-bbl. pumper at 1,505-07 feet.

Six-inch was cemented at 1,522 feet at Catalina Oil Co.'s No. 2 Urania, Section 8-10-2e. A derrick is up for O. W. Clark's No. 3 Miles, 770 feet east and 605 feet north SW cor. NW NW, Section 25-10-1e. Clark's No. 6 Tullos, 320 feet north and 100 feet west SE cor. SE SW, Section 23-10-1e, is a derrick. Chal Daniel's No. 1 Urania, Section 23-10-1e, tested salt water with a small show of oil in sand at 1,486-90 feet. Hartanzo Oil Co.'s No. 2 Urania, Section 7-10-2e, is drilling at 150 feet. C. A. Hudson's No. 1 Urania, Section 7-10-2e, is drilling at 850 feet. Six-inch casing was cemented at 1,511 feet at Hunt, McCurry & Zoder's No. 5 Urania, Section 7-10-2e. Keen & Woolf's No. 3 Griswold, Section 3-9-1e, was not abandoned as previously reported and is being cored at 1,709 feet. Louisiana Oil Refining Corp.'s No. 7-C Tremont, Section 2-9-1e, is drilling at 1,420 feet.

Six-inch casing was cemented at 1,542 feet at McGaha and associates' No. 1 Urania, Section 5-10-2e. Montague Oil Co.'s No. 4 Zenoria, Section 11-9-1e, has a hole full of oil from sand at 1,501-03 feet and is waiting for a standard rig. Six-inch casing was cemented at 1,486 feet at Natural Gas & Fuel Corp.'s No. 5 Tullos, Section 26-10-1e. Same company's No. 7-M Urania, Section 20-10-2e, is drilling at 1,225 feet and No. 8-M is drilling at 1,100 feet. Pima Petroleum Co. is arranging to deepen No. 8-B Urania, Section 7-10-2e, which was abandoned at 1,531 feet. Shreveport Oil Corp.'s No. 2 Pendarvis, Section 26-10-1e, is being bailed to test at 1,512-16 feet and No. 3 Pendarvis, 640 feet north and 712 feet west SE cor. SW SE, is a derrick. Wetherbee and associates' No. 6 Urania, Section 2-9-1e, had sand at 1,500-02 feet and is waiting for a standard rig and the plug at 1,475 feet is being drilled at No. 2-B Urania, Section 3-9-1e. Surface casing was set at 100 feet at O. F. Whittaker's No. 6 King, 630 feet north and 530 feet east SW cor. NE NW, Section 36-10-1e. On the Winn Parish side Allen and associates' No. 2 Allen, Section 23-10-1e, had sand at 1,507-13 feet and is waiting for a standard rig. Natural Gas & Fuel Corp.'s

NEW DEEP SAND TEST IN LAWSON AREA; FIFTEEN WILDCAT FAILURES IN WEEK

By James H. Dameron

EL DORADO, Ark., Oct. 11.—Phillips Petroleum Co. and associates' No. 2 Cordell, SE SE NE, Section 6-18-13, was put on an air jammer last Tuesday and started producing 2,000 bbls. of fluid, 80 to 90 per cent salt water, and the remainder high gravity oil from sand at 2,967-84 feet while the Simms Oil Co. and Sun Oil Co.'s No. 1 Simmons, NW NE SE, Section 9-18-13, another Lawson wildcat test, is flowing salt water from sand at 2,936-44 feet.

No gauge has been taken on the Phillips company well and its production is variously estimated to be between 200 bbls. of oil and 1,800 bbls. of salt water and 400 bbls. of oil and 1,600 bbls. of salt water. The well was blowing from 2,700 feet down and was shut down Friday afternoon. It appeared to scouts watching the area that the Phillips company's well did not have enough salt water to blow steadily.

Southeast a couple of miles Simms and Sun company's No. 1 Simmons was flowing 2,000 bbls. of salt water from 2,944 feet. Four and one-half inch casing with a perforated liner had been set at 2,936 feet with a packer. The test had white sand streaked with chalk rock from 2,936-39 feet and white sand from 2,939-44 feet. Drillers are having difficulty in pulling the liner. The test is to be cored and deepened. Offsetting No. 1 Simmons to the southwest, Natural Gas & Fuel Corp.'s No. 1 cored white sand at 2,950-51 feet and a red gummy formation streaked with hard lime at 2,951-54 feet and is drilling ahead.

A quarter of a mile east of the Phillips company well, Southern Crude Oil Purchasing Co. is rigging up for a deep sand test. Two other tests, one east and the other southeast, are drilling for the deep sand.

Four deep sand tests, three in Louisian and one in Arkansas, were failures last week. In all there were 15 wildcat failures in Louisiana last week most of which were along the Caldwell-Angelina flexure. Nothing promising was uncovered in the Georgetown area. A flurry of excitement was created around the Dodson area in Winn Parish when it was claimed a shallow find was made in J. C. Long's No. 1 Milam, but the showing was passed up by the operators and the test is drilling ahead.

Arkansas Fuel Oil Co. is completing its fifth producer in Lafayette County, Arkansas, in the freak pool just east of Bradley. South of the pool, Kensaw Petroleum Co.'s test is standing with a hole full of water.

Union County

Calgo Oil Co.'s No. 1 Primm, Section 9-18-17, is being delayed while a fishing job at 1,330 feet is being cleaned up. H. L. Hunt's No. 1 Dykes, Section 21-18-12, is a rig. Imperial Oil & Gas Co.'s No. 1 Goodwin, Section 26-17-16, is shut down for orders at 3,112 feet. Twelve and one-half inch casing was set at 198 feet and Marine Oil Co.'s No. 1 Thompson, Section 10-18-13, is drilling at 1,460 feet. Ten-inch casing was set at 111 feet at H. O. Meller's No. 1 L. Hill, Section 10-18-16, and the test is down 580 feet. Natural Gas & Fuel Corp.'s No. 1 Cor-

(Continued on Page 118)

No. 1-F Urania, Section 23-10-1e, tested salt water at 1,518-24 feet and was abandoned. Ten-inch was set at 101 feet at F. A. Schuman's No. 1 Albritton, Section 27-10-1e.

Caddo Parish

A 150-bbl. chalk rock producer was the best well in Caddo for the week. It was Ohio Oil Co.'s No. 22 E. K. Smith, Section 7-21-14, which is flowing 150 bbls. by heads from 1,659 feet. Gulf Refining Co.'s No. 253 Ferry Lake, Section 22-20-16, is flowing 47 bbls. daily through 2-inch tubing set with a packer, total depth 2,286 feet. Ohio company's No. 21 Smith, Section 12-21-15, is making 10 bbls. on the pump at 1,644 feet. Manie Drilling Co.'s No. 1 Cunningham, Section 15-17-14, was dry and abandoned at 2,300 feet. W. D. Chew's No. 1-A Caddo Levee Board, Section 9-20-16, was abandoned at 2,307 feet when it was put on the pump and started making salt water. The derrick for H. P. Burford's No. 1 Dambley, Section 2-20-16, was abandoned as was the derrick for Victor Wenzell's No. 1 Hunsicker, Section 15-20-15.

Caddo deep tests during the past week were disappointing and deep drilling in that county had cold water thrown on it Dixie Oil Co.'s No. 1 Jolly, Section 27-22-15, is drilling at 4,405 feet. Gulf Refining Co.'s No. 1 J. M. Byrd, Section 2-19-24, was dry at 3,903 feet and casing is being pulled preparatory to abandoning. Magnolia Petroleum Co.'s No. 16 Dillon, Section 24-21-15, is drilling lime and shale at 3,631 feet; No. 17 Dillon is drilling hard shale at 3,591 feet. Magnolia Petroleum Co.'s No. 1 Spell, Section 29-21-15, was dry at 3,553 feet and casing is being pulled. Magnolia Petroleum Co.'s No. 1 Bradford, Section 24-21-15, is drilling lime and shale at 3,950 feet. Four and one-quarter inch casing was pulled and The Texas Company's No. 42 C. M. L. Co., Section 23-21-15, is being reamed to 3,820 feet.

Six-inch casing was cemented at 1,018 feet at Bayou State Oil Co.'s No. 23 Peak, Section 23-22-15. W. H. Cook's No. 1 Muslow, Section 32-21-15, is drilling at 200 feet. Six-inch is being set at 2,135 feet at Dixie Oil Co.'s No. 18 Muslow, Section 18-20-15. A derrick is being built for Dixie Oil Co.'s No. 81 Robertshaw, Section 13-21-15, and No. 10 Slattery, Section 27-21-15, is drilling gumbo at 2,828 feet. On the Gulf company's Ferry Lake lease No. 252 is waiting for casing to set at 2,145 feet; No. 254 is waiting for a standard rig at 2,275 feet; No. 255 is being bailed to test at 2,270 feet; No. 256 is being bailed to test casing set at 2,135 feet; No. 257 is being bailed to test at 2,300 feet; No. 258 is a derrick and location was made for No. 259 Ferry Lake, 1,620 feet south and 1,620 feet west NE cor. Section 16-20-16. Magnolia company's No. 1 Wemple, Section 14-20-15, is drilling chalk rock and shale at 1,700 feet.

Six-inch casing was cemented at 2,256 feet at Murphy and associates' No. 1 Youree, Section 13-20-15. Eight-inch casing is being set at 1,400 feet at Morris Drilling Co.'s No. 2 Pala, Section 1-20-16. Owl Oil Co.'s No. 1 Bryson, Section 9-17-16, was deepened to 2,824 feet and is being bailed to test. A derrick is up for Owl Oil Co.'s No. 1 Hammock, 371 feet south and 540 feet east NW cor. SW, Section 34-18-16, and No. 1 Wilburn, Section 4-17-16, is drilling at 1,400 feet. Superior Oil Co.'s No. 5 Youree, Section 26-20-15, is being swabbed to test at 2,270 feet.

On The Texas Company's leases No. 65 Caddo Levee Board, Section 33-21-16, is being rigged; No. 1-B Caddo Levee Board, Section 22-15-12, is shut down at 935 feet, corrected depth; No. 40 C. M. L. Co., Section 23-21-15, was bailed dry at 2,321 feet and is shut down for orders; 6-inch was set at 2,194 feet at No. 1 Curtis, Section 14-20-15; a derrick is up for No. 55 Harrell, Section 4-21-16; No. 12 Russell, Section 3-20-16, is drilling sand and shale showing oil at 2,292 feet. Thomason and associates' No. 2 Muslow fee, Section 31-21-15, pumped a little oil and salt water at 1,545 feet. The fluid was pumped down and the well will be deepened with cable tools. Six-inch was cemented at 1,390 feet at the same operators' No. 3 Muslow. Unity Petroleum Co.'s No. 4 Crystal fee, Section 24-21-16, tested salt water at 1,084 feet and has been temporarily abandoned; 8-inch was set at 1,005 feet at No. 6 and at 1,015 feet at No. 7 and derricks are up for No. 8 and No. 9 Crystal. Van Cleve Syndicate's No. 1 Edson, Section 32-21-15, bailed dry at 1,623 feet and filled up 100 feet with oil in 14 hours. Arrangements are being made to deepen. Six-inch casing was cemented at 2,165 feet at Victor Wenzell's No. 2 Hunsicker, Section 15-20-15, and No. 3 is rigging. Ten-inch was set at 110 feet at Wenzell's No. 2 Wemple, Section 14-20-15.

Bossier Parish

R. L. Crook's No. 4 Larkin, Section 14-19-11, was completed at 400 feet for a 500,000-foot gas well. Olmsted and associates' No. 10 Strange, Section 23-19-11, was dry and abandoned at 380 feet. Henderson and associates have abandoned the derrick for No. 1 Burckhalter, Section 17-18-11. Autrey Oil Co.'s No. 2 Snyder, Section 22-19-11, is drilling blue shale at 292 feet.

Monroe District

Two big gas wells, one with 1,000 pounds rock pressure, were completed in the Monroe Field last week. Natural Gas Producing Co.'s No. 8 Tensas Delta, Section 33-22-4e, was finished at 2,171 feet, making 7,500,000 feet of gas with 1,000 pounds rock pressure. Ladell and associates' No. 34 fee, Section 6-19-5e, was completed at 2,171 feet and made 21,000,000 feet of gas.

United Carbon Co.'s No. 1 Clarke, Section 26-20-5e, is drilling at 2,244 feet. Gulf Refining Co.'s No. 1 West Virginia Section 17-17-5e, is drilling rock at 1,195 feet. Hatcher & Evans' No. 5 fee, Section 17-19-4e, is drilling at 500 feet. Ladell and associates' No. 35 fee, 3,300 feet south and west NE cor. Section 1-19-4e, is a rig. Maurey Drilling Co.'s No. 2 Frierson, Section 20-19-4e, is drilling. Ouachita Natural Gas Co.'s No. 2 D'Arbone, Section 25-19-2e, is drilling No. 4 Cole, Section 7-19-4e, is drilling gas rock at 2,350 feet and 6-inch casing was cemented at 2,140 feet at No. 7 Allison, Section 37-21-4e. Palmer Corp.'s shale and boulders at 1,512 feet. United Carbon Co.'s No. 1 Patton, Section 10-20-4e, set 12-inch at 186 feet. Gulf company's No. 1 Lizzie Nelson, Section 5-19-1e, is drilling at 2,482 feet. A derrick is up for Natural Gas Producing Co.'s No. 1 Stevens, 660 feet south and east NW cor. Section 31-21-4e. United Carbon Co.'s No. 1 White, Section 32-21-4e, has spudded.

Webster Parish

Magnolia Petroleum Co.'s No. 1 Lewis, Section 25-23-10, is shut down at 2,687 feet waiting for 6-inch casing. No. 4 Tiner, Section 21-21-10, is being rigged. R. W. Norton's No. 1 Josey & Massey, Section 27-21-10, is drilling anhydrites at 4,315 feet. Smitherman & McDonald's No. 1 Oakley, Section 29-23-11, is drilling anhydrite at 4,864 feet.

ARKANSAS

Norphlet Producer

Leading all completions in the division for the past week was The Texas Company's No. 8 Calloway, Section 4-16-15, in the Norphlet area. It was completed in 12 feet of sand topped at 2,352 feet and is making 350 bbls. on the pump. Another interesting completion in Smackover was Lion Oil & Refining Co.'s No. 10-A Graves, Section 3-16-15, which is being produced with air. The well was put on air at 2,673 feet and is making 1,100 bbls. of fluid, 96 per cent salt water. Federal Petroleum Co.'s No. 9-A Lawton, Section 10-16-15, was completed in sand at 2,609-16 feet and is pumping 40 bbls. Gulf Refining Co.'s No. 48 L. Werner, Section 6-16-16, is pumping 10 bbls., 90 per cent salt water, from 17 feet of sand at 2,040 to 2,057 feet.

Imperial Oil & Gas Co. completed a brace of pumpers on the Parker lease in Section 21-17-16, Lisbon Field. No. 2 was good for a 14-bbl. pumper in 46 feet of broken sand topped at 2,113 feet and No. 3 was a 11-bbl. pumper in 48 feet of broken sand topped at 2,143 feet. Ohio Oil Co.'s No. 3 Stocks, Section 21-17-16, is pumping 35 bbls. at 2,108-47 feet. Rovenger Oil Corp.'s No. 3 on the Dumas lease, Section 9-17-16, is a 20-bbl. pumper at 2,086 to 2,106 feet.

Belmont and associates' No. 1 Hollis, Section 13-18-15, is drilling at 1,360 feet. G. J. Child's No. 4 fee, Section 8-16-16, is drilling at 2,435 feet. Clark & Greer's No. 1 LeCroy, SW cor. N half SE NE, Section 6-18-15, is drilling at 480 feet. S. Cook's No. 7 Tatum, Section 7-16-15, is drilling at 2,310 feet. Constant Refining Co.'s No. 4 Robinson, Section 6-18-15, is drilling at 920 feet. Federal Petroleum Co.'s No. 6-B Wells, NE cor. SE NW, Section 15-16-15, is a rig. Six-inch was cemented at 2,605 feet at Gladys Belle Oil Co.'s No. 9 Cook, Section 16-16-15. Grimes & Jones' No. 10 Van Hook, Section 8-18-14, is drilling at 1,965 feet. Gulf Refining Co.'s No. 42 Hardy-Murphy, Section 3-16-15, has 700 feet of oil in the hole from sand at 2,362-73 feet and is waiting for a standard rig; No. 43 is drilling hard rock at 2,336 feet. Gulf company's No. 1-A Slaughter, Section 20-17-16, tested 500,000 feet of gas with a show of oil from 42 feet of broken sand topped at 2,160 feet. The test was deepened to 2,209 feet and is being bailed to test. F. C. Henderson's No. 3 Smith, Section 18-16-15, was temporarily abandoned at 2,804 feet. Six-inch is being set at 1,951 feet at Hollifield & McFarland's No. 14 Giller, Section 10-16-15.

Humble Co.'s Operations

Humble Oil & Refining Co.'s No. 3 Goodwin, Section 20-17-16, is drilling at 1,389 feet and No. 2 Snydor, Section 20-17-16, has 140 feet of oil in the hole from 42 feet of broken sand topped at 2,086 feet and is waiting for a standard rig. Imperial Oil & Gas Co.'s No. 4 Parker, Section 21-17-16, is drilling at 715 feet; No. 1 Stocks, same section, is drilling at 1,435 feet and No. 2 is a derrick. Keen & Woolf's No. 3 Murphy, Section 9-16-15, is shut down at 2,557 feet for orders. Louisiana Oil Refining Corp.'s No. 1-B Murphy, Section 9-16-15, is drilling at 2,565 feet. Lion Oil & Refining Co.'s No. 6-C Bilyew, Section 8-16-15, is drilling at 875 feet. A rig is up for Lion company's No. 1 Werner, NE cor. SE SW, Section 21-17-16. Magnolia company's No. 4 Childs, Section 8-16-16, is drilling at 1,100 feet. On the Magnolia company's Halsey lease, Section 20-17-16, No. 1 is waiting for 6-inch to set at 2,126 feet and derricks are up for No. 7, SW cor. NW NE, and No. 8, SE cor. NW NE. Magnolia company's No. 4 Hessler, Section 8-16-16, is drilling at 2,500 feet; No. 1 Murphy, Section 28-16-16, tested salt water at 2,709 feet and is drilling at 2,712 feet and 6-inch casing was cemented at 2,098 feet at No. 3 Slaughter, Section 17-17-16.

Murdock and associates' No. 4 Hays, Section 4-16-15, is drilling at 1,855 feet and No. 1 Vestal, Section 17-16-15, is coring at 2,678 feet. Natural Gas & Fuel Corp.'s No. 7-B Lawson, Section 10-16-15, is drilling at 2,430 feet. A rig is up for Ohio Oil Co.'s No. 4 Stocks, CSL W half NE SW, Section 21-17-16. Pure Oil Co.'s No. 7 Bilyew, Section 8-16-15, has 800 feet of fluid in the hole from sand at 2,295-97 feet. A. L. Ramage's No. 1 Ezell, Section 24-16-15, is drilling at 1,624 feet. Reynolds & Marr's No. 4 Goodwin, Section 21-17-16, is being bailed to test 34 feet of sand topped at 2,116 feet. Drillers milled through the casing at 2,004 feet and drilled to 2,018 feet where Sam Richardson's No. 2-M Murphy, Section 14-16-15, tested salt water. The hole is being plugged back.

Rovenger Oil Corp.'s No. 9 Dumas, Section 9-17-16, is drilling at 1,350 feet. Six-inch casing was cemented at 2,621 feet at Simms Oil Co.'s No. 12 Cook, Section 16-16-15, and at 2,060 feet at No. 1 Murphy, Section 33-16-16. Southern Crude Oil Purchasing Co.'s No. 10 Graves, Section 3-16-15, is drilling at 2,916 feet; a derrick is up for No. 1 Hill, NW cor. NE SW, Section 5-18-13; six-inch was cemented at 2,075 feet at No. 6-B Slaughter, Section 3-17-16. Southern company's No. 5-A Wells, Section 15-16-15, has 500 feet of oil in the hole from sand at 2,591 feet and is waiting for a standard rig. The test tested salt water at 2,954 feet and was plugged back. Six-inch was cemented at 2,378 feet at Standard Oil Co.'s No. 37 Hardy, Section 9-16-15.

Standard Oil Co.'s No. 38 Hardy, 670 feet north and 190 feet east SW cor. Section 4-16-15, is a derrick. The sand pump is being run at The Texas Com-

(Continued on Page 131)

ARTESIA FIELD EXTENDED TO NORTH BY PUEBLO OIL CO. COMPLETION

By Special Correspondent

ARTESIA, N. Mex., Oct. 9.—Interest for the week in this section of the State centered in the completion of three wells, two in the Artesia Pool and the third on the west side of the Pecos River close to the Brown well, which started oil activity in this section 20 years ago. Of the three completions, that of the Pueblo Oil Co. in the NE NE, Section 33-17-28, is attracting attention, this well extending the field 1½ miles to the north. Two sands were encountered in this well, the first at 1,988-97 feet and a second at 2,185 feet. Shot with 60 quarts in the lower pay, the well cleaned itself, making three heads within an hour. The upper sand will be given a shot.

West of the Pecos, the Rehn No. 1 on the Winans ranch in the NW NE, Section 15-18-26, is estimated to be good for around 20 bbls., this coming from two sands encountered in the 1,600-foot level. A shot caused both oil and gas to come freely, and after being cleaned out, 1,688 feet of tubing was run, and a pumping test is now being made.

In Section 2-18-27, the Empire Oil & Gas Co. has completed a shallow producer. This well is making 17 bbls. natural from a depth of 420 feet, and it is expected will do better than 20 bbls. when shot. The hole will probably be carried down to the 1,600-foot pay, as No. 1 has been a consistent producer from this level, making 33 bbls. daily for the past two months.

Flynn, Welch & Yates have added another producer in their No. 52 in the SW SE, Section 28-18-28.

In the Maljamar Pool, the next completion looked for is the Ohio Oil Co.'s No. 1 on the William Mitchell permit in Section 18-17-32, now drilling below 2,300 feet. This well is running approximately 85 feet higher structurally than the Maljamar producer.

After overcoming a bad fishing job on the Maljamar company's No. 1 on the Grace Mitchell permit in Section 5-17-32, the crew dropped 600 feet of pipe, the bottom joint collapsing. All but eight joints have been pulled, and drilling is expected to be resumed shortly.

To the north of the Maljamar, the Cap Rock Oil & Gas Corp.'s No. 1 in Section 11-16-32 is down 600 feet. Henderson, Dexter & Blair, in Section 34-17-33, are underreaming the pipe in their No. 1 well at 750 feet, with the hole caving slightly.

According to a late report, the Wooley, Jones interests have decided to skid the rig from their location in the C SW to the NE SW, Section 21-17-30, this latter being on the Danciger permit, 2½ miles north of the No. 1 Beeson, which is shut down.

DRILLING REPORT

Eddy County

Compton's No. 2 Mann permit, Section 3-18-27, shut down at 2,060 feet; Cook-Ironsides' No. 1, NE, Section 10-20-29, shut down at 2,040 feet; Decum Development Co.'s No. 1 Vandagriff permit, Section 5-17-28, making 1,000,000 feet of gas

(Continued on Page 82)

Pipeline Number Now Unobtainable

Large Edition Was Completely Sold Out Within a Few Hours of Publication. Compliments from Readers

When The Oil and Gas Journal conceived the idea of publishing a special number telling the story of the pipelines of North America it was with the thought that it would be of general interest and value to the entire industry. But the extent of the interest developed by the actual publication far exceeded all expectations. From the hour of publication until the present the office of The Oil and Gas Journal has been flooded with requests by wire, mail and in person for additional copies of what everyone declares to be the most remarkable publication in the history of the industry.

In mere size it set a new mark in petroleum publications. In accuracy of information not generally known it was at once a textbook and an encyclopædia on pipelines and crude oil transportation. The great map showing the pipelines of the country, supplemented by the page maps of the various companies, were the first to be published in one issue. The variety of special articles dealing with every phase of pipeline construction and operation, written with authority and the co-operation of the leading pipeline men and companies, left no angle untouched.

The result was an unprecedented demand which The Oil and Gas Journal regrets, owing to orders being received too late, it has been impossible to supply. As usual during the preparation of a special number, The Oil and Gas Journal published an advance notice several weeks ago suggesting that orders be placed early to assure copies. There was a ready response, but those who delayed ordering found themselves too late. It need hardly be said that the expense of getting out such a mammoth issue prohibits republication.

Samples of the appreciative letters received follow:

CERTAINLY A WHOPPER

Standard Oil Co. of Indiana
Chicago, Oct. 8, 1926

Just received the October 7 issue of The Oil and Gas Journal and I want to congratulate you. It certainly is a whopper. I am particularly interested in your story on pipelines.

GEORGE M. COOK.

A FINE JOB

Skelly Oil Co.
Tulsa, Okla., Oct. 8, 1926

I have just gone over the October 7 issue of The Oil and Gas Journal and hasten to extend to all concerned my hearty congratulations.

I know of no institution in the world that could have done so fine a job of it, including the editorial work, the typography, press work and binding, as The Oil and Gas Journal.

GLENN CONDON.

FULL OF SPLENDID STUFF

Chicago, Oct. 9.

It is now 2 a. m.—my being awake is due to your exceptionally fine number of The Oil and Gas Journal this week. It is surely full of splendid stuff and the maps are winners.

More power to you all.

GUSTAV EGLOFF.

Dallas, Tex. (Telegram)

Can use 20 extra copies, Seventh issue.

MORGAN C. JONES.

FROM A VETERAN OIL MAN

Casey, Illinois

I salute the editorial staff of The Oil and Gas Journal upon your Crude Oil Transportation Number. Every oil and gas man and every one in the oil and gas business should have and keep a copy of the October 7 issue.

CHARLES A. WHITESHOT.

CALLS FOR COPIES

From among the hundreds of requests for additional copies the following telegrams and letters are selected at random:

Wichita Falls, Tex. (Telegram)

If we have not already placed order for 150 copies October 7 issue please express same to Ohio Mid-Cities Corp., 328 Press Bldg., Binghampton, New York.

D. S. PARSHALL, President.

NEWS DEALERS REPORT DEMAND

Los Angeles, Cal.

Kindly make our order 50 copies.
STAR NEWS CO.

Okmulgee, Okla. (Telegram)
Send 12 Journals.

BOB WATT.

San Francisco, Cal.

We wish to order three copies of the October 7 issue. They are to be in addition to our regular subscription copies.

STANDARD OIL LIBRARY.

Dallas, Tex.

Would like to have 15 copies of October 7 issue.

GOLDMAN BROS.
Lima, Ohio.

Would like very much to have 12 extra copies of your Pipeline edition.

The Buckeye Pipe Line Co.
G. P. Dildine,
Asst. Secretary.

Quincy, Ill.

My name appears on your subscription list and therefore I will receive a copy of your pipeline issue but I am enclosing order for an extra copy.

W. J. KING,
Standard Oil Co. of Ind.

United States Department of Commerce, Bureau of Mines.

I would appreciate very greatly if you will send me a copy of your pipeline edition.

E. B. SWANSON,
Economic Analyst.

Mauch Chunk, Pa.

Enclosed find stamps for issue of The Oil and Gas Journal of October 7 with map.

J. H. McFADDEN.

Minneapolis, Minn.

Send 50 extra copies and increase our regular order by 10.

ENGELMAN NEWS CO.

Newark, Ill.

Enclosed find stamps for two extra copies of October 7 to be mailed to my address.

F. F. KANO.

UNABLE TO SUPPLY THE DEMAND

When the avalanche of telegrams requesting copies of the issue October 7 (the Crude Oil Transportation Number) descended upon The Oil and Gas Journal last week, efforts were made by this publication to purchase copies from newsstands in different sections of the country to try to serve the vast telegraphic and mail demand for the issue. So great was the demand that although representatives of The Oil and Gas Journal visited newsstands in widely scattered cities shortly after The Journals were received there, it was possible to buy only a comparatively small number of copies and not anyway near enough to supply the demand which poured into the main office at Tulsa and into the different branch offices.

The Oil and Gas Journal learned, through these efforts to buy copies, that premiums were being asked over the regular price for the publication. One news dealer endeavored to buy copies from others at 20 cents each, he stating he had, in one day, offers from 50 men of 35 cents apiece for the issue.

It has always been the policy of The Oil and Gas Journal to maintain the regular price of 15 cents a copy on every issue. Its special numbers, such as the one issued October 7 on crude oil transportation, are prepared as a service to the petroleum industry and the readers of this publication and no extra charge is ever made. Consequently, The Oil and Gas Journal will appreciate being informed of the names of news dealers who charged more than the regular price of 15 cents for a copy of the October 7 or any other issue of this publication.

ANALYSIS OF MICHIGAN CRUDE OIL

The crude petroleum being produced in the Saginaw Field of Michigan appears to be a high-grade intermediate base crude, according to an analysis of a sample recently completed by the Bureau of Mines, Department of Commerce. The oil appears to be very much like a number of Mid-Continent crudes, and similar to some oils in Illinois and neighboring states. The crude oil has a gravity of 45-46 degrees A. P. I., and contains about one-fourth of 1 per cent of sulphur. It flows easily and has a brownish-green color by reflected light. The crude is shown by the Bureau of Mines method of analysis and interpretation to contain about 46 per cent of gasoline of 60-61 A. P. I. gravity and about 13 per cent of 43 gravity kerosene. The presence of lubricating stocks is also indicated by the bureau's analysis.

The discovery well of the Saginaw Field was completed in August, 1925, with an initial production of about 20 bbls. per day. Since that time 29 wells have been drilled, of which 5 were dry holes. These 5 dry holes were drilled outside of the defined limits of the field, none nearer than 1 mile from production. The production of the field at present is about 300 bbls. per day.

The approximate summary of the analysis of this crude is as follows:

APPROXIMATE SURVEY

	Per cent	Sp. gr.	°A. P. I.	Viscosity
Light gasoline (endpoint 212° F.)	14.9	0.691	73.3	
Total gasoline and naphtha	46.1	.736	60.8	
Kerosene distillate	13.2	.808	43.6	
Gas oil	15.8	.845	36.0	
Nonviscous lubricating distillate	8.2	.866– .894	31.8– 26.8	50–100
Medium lubricating distillate	4.1	.894– .912	26.8– 23.7	100–200
Viscous lubricating distillate	1.9	.912– .921	23.7– 22.1	Above 200
Residuum	8.8	.954	16.8	
Distillation loss	1.9			

The detailed analysis of a sample of this crude is as follows:

Michigan—Saginaw Field, Saginaw County. Berea sand, 1835-73 ft.
Specific gravity, 0.798. A. P. I. gravity, 45.8°
Per cent sulphur, 0.23. Per cent water, nil
Saybolt Universal viscosity at 70° F., 34 sec. Pour point below 5° F.
Saybolt Universal viscosity at 100° F., 34 sec. Color, brownish green

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Air Distillation. Barometer 743 mm. First Drop: 30°C. (86°F.)

Temp °C.	Per Cent Cut	Sum Per Cent	Sp. gr. Cut	°A. P. I. Cut	Viscosity at 100° F.	Cloud Test °F.	Temp. °F.
Up to 50	1.7	1.7)	0.667	80.6	...	..	Up to 122
50 – 75	4.2	5.9)					122 – 167
75 – 100	9.0	14.9	.706	68.9	...	..	167 – 212
100 – 125	9.5	24.4	.723	64.5	...	..	212 – 257
125 – 150	7.6	32.0	.751	56.9	...	..	257 – 302
150 – 175	8.1	40.1	.770	52.3	...	..	302 – 347
175 – 200	6.0	46.1	.786	48.5	...	..	347 – 392
200 – 225	6.7	52.8	.802	44.9	...	..	392 – 437
225 – 250	6.5	59.3	.815	42.1	...	..	437 – 482
250 – 275	7.9	67.2	.830	39.0	...	..	482 – 527
Vacuum distillation at 40 mm.							
Up to 200	3.7	3.7	.854	34.2	42	28	Up to 392
200 – 225	5.9	9.6	.862	32.7	47	40	392 – 437
225 – 250	4.6	14.2	.878	29.7	62	60	437 – 482
250 – 275	4.0	18.2	.895	26.6	101	70	482 – 527
275 – 300	3.9	22.1	.913	23.5	202	86	527 – 572

Residuum, 8.8%. Distillation loss, 1.9%
Carbon residue of residuum, 5.7%. Carbon residue of crude, 0.5%

How long could you continue in business if all your tank cars were suitable for carrying only gas oil to and from your refinery

Why then a "Gas Oil Limited" cracking process when the Dubbs Process will take gas oil, fuel oil, topped crude or low grade crude without discrimination, and deliver more good Knoxless-Pullsmore gasoline in each trip at lower cost per gallon, than any other method, whether cracking or distilling

And the Dubbs Process will require less of your good money for the plant investment per barrel of gasoline produced

Universal Oil Products Company
Owners of the Dubbs Process
310 South Michigan Ave
Chicago, Illinois

Bruni Extension Well Swabs 400 Bbls.

Two Completions in Randado Field in Quiet Week. Active Trading in Southwest Texas Leases

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Oct. 11.—One well in the Bruni tract extension of the Aviator Pool, in Webb County, the Crown Central's No. 18 Bruni, in the northeast corner of Block 44, swabbing at the rate of 400 bbls. a day at 1,730 feet, and two wells in the Randado Field, one estimated at 35 bbls. and the other at 30 bbls., were the only completions the past week. It was the quietest week in a whole year in Southwest Texas.

The two completions in the Randado Field are the Simms Oil Co.'s No. 5 Weil, in Block 8 of Survey 81, which is estimated at 35 bbls. at 1,329 feet, and M. J. Basharn's No. 2 Weil, in the same block, estimated at 30 bbls. of oil but making considerable water in addition, from a depth of 1,342 feet. It was Bashara's No. 1 that extended the Randado Field three-fourths of a mile to the north.

Though completions in Southwest Texas were few there has been some active trading. Milham Corp. has purchased a lease on about 10,000 acres in Duval County. The Texas Company has purchased a half interest with the Lewis Oil Corp. in a considerable block in Duval County, including Sections 456, 668, 663, 664, 713, 650, 701, 700, 699, 701½ and 673. The tracts lay together and are about midway between the Cole and Carolina-Texas Fields. Sun Oil Co. has bought a half interest with the Simms Oil Co. in the Copita tract, in Duval County for $26,100. The tract embraces 4,000 acres. Simms has sold a half interest in 2,000 acres out of Porcions 80 and 81 in Starr County, where it is starting to drill a well, for $35,000, to the Magnolia.

Associated Oil Co. and Usher Carson's discovery well is continuing to make some water with the oil it is producing but has not got back to the amount of production it was making when the choke was increased and let the water in. The well is in the Carolina-Texas Field, in Webb County.

United States Gas & Oil Co. has abandoned at 2,765 feet its No. 1 Benavides, in Survey 679 of Webb County, one-half mile to the east and a little north of the Associated-Carson discovery well. It failed to complete a fishing job at 2,765 feet, whipstocked through the casing and tested a sand at 2,110-20 feet and got salt water and is abandoning the hole.

In the proven fields of Southwest Texas it has been a quiet week. Somerset has only a few rigs runnings. In the Luling Field, Magnolia is keeping a few rigs running on the acreage it got from the United North & South Oil Co. Lytton Springs has nothing new drilling.

Bruni Extension

In Webb County in the Bruni tract extension of the Mirando Field, Associated Oil Co., which has the south half of block 44 and Sun Oil Co., which has the north half, are each starting new wells. The Sun Co., got poor producers or failures along its north line and Associated got some failures in the east end of its half. Now in the center of the block each has a good well (300 to 350 bbls) and they are starting more. North and east of this block is some of the best production in the field. Gibson Oil Corp., which drilled all its outside locations, has set casing on two inside locations in the north 60 acres of the west half of block 13. Staley & Wynne and Crown Central are continuing to drill their acreage but other than that the Bruni tract extension is confined largely to drilling on the rim of production with the possibility that an extension to the extension may be picked up.

Carolina-Texas Tests

In the Carolina-Texas Field, about a dozen tests are listed. The Associated-Carson discovery well that went to all water when the choke was increased is coming back to oil now that it is reduced. Thus far, though surrounded by tests, it is the only oil producer. There are five tests in that area that have passed the 2,600 foot sand from which the discovery well is producing and are headed for deeper pay, all but one being now below 3,000 feet.

In the Randado Field, in Jim Hogg County there are about two dozen rigs in operation more or less constantly at this time but most of these are in the fringe of production. Several are to the north and there is the possibility of some further extension of this pool to the north. That is the only direction it has ever been extended and it has extended in that direction about three times. The Texas Company recently bought 80 acres a quarter of a mile north of production.

Cole Gas Field-Duval

O. W. Killam's No. 6 Lopez, Survey 319, has spudded in and is drilling at 1,830 feet, 2,050 feet from east line and 150 feet from north line.

Piedras Pintas

In Piedras Pintas Salt Dome in Duval County, Humble Oil & Refining Co.'s No. 6 Walsh is pumping, making 116 bbls. in 10 hours, and the No. 1 Becher, Survey 531, is drilling at 3,048 feet. Gulf Production Co. is making location for No. 1 Tinney.

Randado Pool-Jim Hogg

Grayburg Oil Co.'s No. 6 Weil, Block 15, Survey 81, at 1,542 feet made 1,000,000 feet of gas, and No. 7 Weil, in same block is drilling at 800 feet. No. 8 Weil in the same block is rigging up, 150 feet from NE, cor. Houston Gulf Gas Co.'s No. 12 Palacious, Block 11, Survey 291, is drilling at 2,800 feet. In Block 3, Survey 291, Johnson and others' No. 13 Palacious has set casing at 1,269 feet, and No. 15 Palacious is drilling at 1,000 feet. M. J. Bashara, Block 8, Survey 81, No. 2 Weil has set casing at 1,328 feet in sand. Simms Oil Co.'s No. 15 Palacious, in Simms Block in Survey 291, made 2,000,000 feet of gas at 1,289 feet and is drilling deeper and No. 5 Weil, Block 16, Survey 81, has sand at 1,324-29 feet. In Block 8, Survey 81, Simms Oil Co. is making location for No. 6 Weil and in Block 7 for No. 7 Weil. Magnolia Petroleum Co., has made location for No. 9 M. S. Banks in Survey 415, 150 feet from the north line and 1,300 feet from the west line. E. L. Smith-Maddox in the tract north of Simms block in Survey 291 has made location, 464 feet from north line and 150 feet from the west line for No. 6 Palacious and No. 5 Palacious 150 feet from SE. cor. is in sand at 1,276 feet. In same block they have made location for No. 9 Palacious, 778 feet from north line and 150 feet from west line, and are rigging up for No. 13 Palacious, 465 feet from the north line and 150 feet from the east line. D. C. Smith, Survey 83, Block 1, has completed a water well and is ready to spud in No. 1 Weil, 450 feet from north line and 150 feet from the west line.

Henne, Winch & Fariss Pool

Magnolia Petroleum Co.'s No. 14 Killam-Martinez, Survey 276, is drilling at 2,040 feet and derrick is up. 1,400 feet from the east line and 1,400 feet from the north line for No. 16 "B" Martinez. Humble Oil & Refining Co.'s No. 1 Vela, Block 5, Survey 5, has reached the contract depth of 2,280 feet and is waiting orders. Rydal Rycade interests' No. 4 Vela, Block 12, Survey 1, is drilling in hard rock at 100 feet. 321 feet from the west line and 300 feet from the north line.

Kitselman & St. Albans Pool

K. & S. Corp.'s No. 46 Holbein is testing at 2,129 feet, in Block 13, Survey 5. Casing was set at 2,015 feet. No. 48 Holbien, Survey 11, Block 5 of K. & S. Corp., is drilling at 250 feet and No. 49 Block 11, Survey 11, is rigging up. Survey 16, Block 9, K. & S. Corp.'s No. 50 Holbien is drilling at 1,500 feet.

Bruni Tracts-Webb

Harper and others' No. 1 Bruni, Survey 835, which made a small gas well at 1,660 feet is now at 1,665 feet, total depth. O. A. Topham's No. 1 Bruni, Block "C", Survey 2,048, SE. cor., is coring in sand below 1,400 feet. Gibson Oil Co. west one-half of Block 13, 520 feet from east line and 447 feet from south line, has set casing at 1,732 in No. 16 Bruni and will drill in this week, and 541 feet from east line and 922 feet from south line No. 17 Bruni has set casing in sand at 1,726 feet. Sun Oil Co.'s No. 7 Bruni, Block 44, has derrick up, 1,600 feet from east line and 1,120 feet from the north line. Crown-Central Oil Co.'s No. 18 Bruni, Block 44, NE. cor., is coring for sand. Straight Eight Oil Co., previously reported as Evans and others, is moving on Puig ranch for No. 1 Puig. Location is east of Kirkpatrick test on same ranch. In south half of Block 44, Associated Oil Co. is ready to spud in No. 4 Bruni, 1,700 feet from east line and 150 feet from north line. Verdine and others' No. 1 Bruni, Survey 123, SE. cor., is drilling at 1,651 feet.

Mirando Oil Field

Crown-Central Oil Co.'s No. 10 Garcia, Survey 606, Lot 56 NW. cor., which is to be a deep test, is drilling at 3,250 feet. Murchison & Fain, Survey 58, has made location for No. 3 Garcia, 600 feet from north line and 1,150 feet from west line.

Caroline-Texas Field

Associated Oil Co.'s No. B 1 Webster, Survey 684, is drilling in shale at 2,435 feet. The Texas Company's No. 2 Webster SW. NE. Survey 684, is drilling at 3,181 feet. Moody Oil Corp.'s No. 1 Benavides SW. NW. Survey 688, is standing at 3,312 feet. Hazlitt-Simmons' No. 1 de la Garza, Block 11, Survey 335, 150 feet from NE, cor., is coring at 2,495 feet. U. S. Gas & Oil Co.'s No. 1 S. Benavides, Survey 679, 160 feet from the north and west lines is preparing to sidetrack at 2,100 feet, total depth 2,750 feet. Killam-Winch's No. 2 de la Garza, Block 11, Survey 336, 150 feet from the south and east lines which tested dry at 3,044 feet is drilling deeper. Hamilton-Warren's No. 1 de la Garza, Block 22, Survey 335, is moving on for test 200 feet from south line and 440 feet from west line. Magnolia Petroleum Co.'s No. 1 Webster, NE, NW, Survey 684, is drilling at 3,040 feet in SE. cor. In Block 9, Section 678, O. W. Killam in No. 2 de la Garza which has been shut down since March 5, 1926, at 2,500 feet has resumed drilling and is at 2,820 feet. Houston Oil Co.'s No. 1 Benavides, Survey 683, is drilling at 150 feet. Location is 1,035 feet from north line and 182 feet from east line.

Cole Gas Field

Associated Oil Co.'s No. 1 S. Benavides on S. Benavides tract, 600 feet from the northwest and northeast lines, is ready to spud in. Houston Oil Co.'s No. 1 "A" (No. 6 Benavides), Survey 16, Block 1, made 40,000,000 feet of gas at 1,690 feet. Cole Petroleum Co. has temporarily abandoned Nos. 19, 21 and 23 Benavides.

Charco Redondo Pool-Zapata

R. R. Clark is moving on for another location in Charco Redondo Pool.

MEDINA COUNTY GAS COMPLETION HELPS CLEAR UP GEOLOGY OF AREA

By B. D. Stevenson

SAN ANTONIO, Tex., Oct. 11.—A gas well estimated at 5,000,000 feet, two feet in the sand at 963 feet, brought in by the Witherspoon Oil Co. in Medina County, three-quarters of a mile east of the nothernmost of the four gas wells completed by Henderson & Holden at about the same depth, has served to help clear up to some extent the geology of that wildcat area where operators have been expecting oil to be picked up. Less than half a mile north of the center of a line from Henderson & Holden's No. 3 Adams and the Witherspoon Oil Co.'s No. 1 Adams the Western Gas & Fuel Co., as reported last week, had a considerable showing of oil in its No. 1 Adams at 1,021 feet, and though having salt water trouble thought it might make a 2 or 3-bbl. well. It is believed there is a fault line running about parallel and north of the Henderson & Holden and Witherspoon wells and south of the Western Gas & Fuel Co. well. If this is the case it makes it look good for Lewis & Feltner, who have made a location on the south side of an extension of this fault two and a half miles farther to the east. They made a location the past week and will spud in soon. Derrick material is going out.

Major companies are taking an increasing interest in this territory. At first there were the four Henderson & Holden wells, all in Edmund C. Durst Survey No. 13, at around 1,000 feet, with a total open flow of 50,000,000 feet of dry gas. Sprague and others, a mile east and a little south, drilled two wells and got showings of oil in both. These wells are supposedly on the south edge of the structure. Western Gas & Fuel got a well showing a little oil in No. 1 Chandler 1,500 feet south of the southernmost of the Henderson & Holden gas wells. Geologists are still far from being agreed on the proposition. Golden West Oil Co. is drilling due north of Henderson & Holden's No. 3, which is the northernmost of the four gas wells, and Western Gas & Fuel Co. is drilling west of the gas wells. The territory is narrowing down and if there is oil in that territory it should show up soon in some of the wells drilling. Sprague and others are still working with their Redus tract test, which has a showing of oil.

Gonzales County Wildcats

In Gonzales County the two wildcats that had showings of oil last week have each improved their position. Scott & Kercheval of Fort Worth are setting casing in their No. 1 Billings, a few miles southeast of Smiley, which had over 100 feet of formation with total depth of hole 1,182 feet. Casing was ordered out from Luling early last week but was delayed in getting there. The test should be ready to be made by now. Seven miles northeast of that, near Cheapside, the Martin Oil & Development Co., which has been having breaks of sand and shale in gumbo and carrying oil, was 20 feet in a gray sand carrying oil and gas at 1,375 feet late last week and the driller thought it looked like a well. It is ratholing ahead to test the thickness of the formation.

O'Hern & Seacoard's No. 2 Benavides.

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Garmesa May Be Commercial Pool

Race for Pay in Rangeley Field. Paradox Anticline May Be Salt Dome. Record Drilling in the Billy Creek Field

By Frank B. Taylor
Staff Correspondent, Rocky Mountain Area

CASPER, Wyo., Oct. 9.—The strike reported last week of the Gypsy Oil Co.'s well on the Garmesa Dome, Garfield County, Colorado, has set casing and drilled on down. The gas was mudded off and the showing of oil ceased when the gas flow stopped. The sand became dark as soon as drilling was resumed and the hole is now at 3,540 feet and still in a very dark sand. Some reports stated that this well was not showing any oil but merely a condensation from the gas. This report is wrong for the well showed a true crude oil and not a condensation. The outcrop of the formations which occur about 15 miles from the well do not show any sand where the showing was struck, so the sand may be a stray. The objective of the well is the Navajo sand, expected around 3,700 feet.

From the showing made in this well the opinion is that a pool of oil and gas lies on the Garmesa Dome in this stray sand and that it is a commercial pool. The location is a problem that can be solved only by further drilling. The gas and oil came in almost without warning and there was 400 feet of open hole when the bit opened the show.

Rangeley Field

In the Rangeley Field three of the big companies are making a race of it to see which one will reach the pay first. The Associated and Tide Water combination have their well at 2,770 feet and have changed from the fishtail to the Hughes as the formation does not mud up and the roller type makes hole faster. The Texas Production Co. is at 2,700 feet with cable tools but the rotary seems to be beating the cable. The Midwest Refining Co. has the hole in the test at 2,630 feet and also ran into some trouble with casing, but this is not considered serious and all three wells should reach the objective, the Dakota sand, within 30 days. These wells are in reality searching for a sand that is thought to be furnishing the present production found in the shallow wells of the Rangeley Field.

Moffat Field

In the Moffat Field, The Texas Company brought in a good well on Section 10-4-92, finding the pay in the Dakota sand at 4,130 feet. This well will be turned into the line at once and the production utilized at the new Craig refinery. The well will make 600 bbls. and is expected to boost the runs from Moffat, which have been dropping off lately. The Texas Company also made four new locations on the Tow Creek Dome, where the company discovered a shale oil production around 2,000 feet last year and on the Wilson Creek Dome, in Rio Blanca County, the company has a wildcat at 2,000 feet after finding a showing in the Mancos shale at 1,500 feet. This showing of oil in the shale may be examined further later on.

The Marland Oil Co., drilling on the Thornburg Dome, Section 8-3-91, has the third well at 1,700 feet and this hole is located farther down the structure than the other two in an effort to get away from the heavy gas pressure found in the first wells. The objective is the Dakota sand and at present the well is swaging casing. The Marland Oil Co. is also about 1,100 feet on Section 34-4-92, on the Iles Dome, Moffat County, this well is a joint test by the Marland and Shafer interests.

The Paradox anticline is presenting a problem to the General Petroleum Co. This company has two wells drilling on this structure and it now appears that instead of the structure being a true anticline, the wells have shown indications that the whole structure is a salt dome. The General Petroleum Co. has made a location for a rotary outfit and is now preparing to start work on same to make a test by this method of drilling and see whether the structure is a true anticline or not. The Mullen well of the General Petroleum Co., on Section 4-46-17, has set casing at 3,980 feeet and is waiting for cement to set. The well is on a cross structure that has its axis at an angle with that of the main anticline. On Section 35-48-19, the General Petroleum Co. has a second well which is swaging casing at 2,780 feet. The first well, located on the cross structure, has had several shows of gas and oil, but it is expected that both wells will be shut down for the present to see what the rotary says.

Operations in Utah

In Utah, the discovery well of the Utah Southern Oil Co. and the Midwest Refining Co. has passed out of the rock salt where it has been drilled for several weeks and is now in a gray shale at 4,100 feet and the last 500 feet of hole has been black shale, gypsum and salt in broken formations. On the Shafer Dome, 5 miles south, the same companies have the first well there at 2,275 feet and setting the 10-inch pipe on bottom. The Utah Southern Oil Co.'s test on the Lockhart Canyon has spudded in and the test in San Juan County, on the Cedar Mesa structure, the Utah Southern Oil Co. and the General Petroleum Co. is at 185 feet and in a red shale.

Wyoming Tests

In Wyoming, the Midwest Refining Co. has shut down the Notches Dome test in Natrona County with the hole at 2,672 feet and oil in the hole that indicates a producer. This showing of oil is in the Embar sand and the well is expected to be kept shut down until next spring as the present production of black oil is sufficient for all needs and the Notches Dome is a black oil field.

The Carter Oil Co.'s test in the Billy Creek Field, Johnson County, is around 4,000 feet and making hole fast. This well is located down the structure from the heavy gassers and is seeking oil instead of gas. The well was drilled with a combination of rotary and cable tools and the hole is a record for the Billy Creek area as it is straight and true, a string of casing was pulled and run twice recently and no sign of frictioning appeared on the pipe. Several holes in the Billy Creek Field, in fact a large majority of the wells there, have much trouble with crooked holes. The Carter well is expected to reach the Muddy sand in the next few days.

The Carter Oil Co.'s test about 30 miles north of Cheyenne, on the Horse Creek structure, has reached a depth of 2,765 feet and some gas has been found in the shale. The Frontier sand is expected to be around 2,850 feet and the drillers hope to reach the Frontier before cold weather. The water supply line is on top of the ground and it is expected that as soon as the Frontier sand is reached and drilled the well will be shut down until next spring.

Rock River and Rock Springs

There is some misunderstanding growing over the names of the Rock River Field and the Rock Springs country in southern Wyoming. This is due to a similarity in the names and the general use of same by writers who do not designate the points clearly.

Rock Creek, or Rock River, is a stream which flows through the Rock River Field, discovered by the Ohio Oil Co., in eastern Carbon County, Wyoming. This stream flows north into the Laramie Basin and empties into the Medicine Bow River. The town of Rock River is located on the Union Pacific Railroad where the stream is crossed by the tracks. The name of the town or stream was given to the oil field. The stream is sometimes called Rock Creek, though more often, Rock River and as the town and field are called Rock River, this name is accorded to the stream also on the maps.

Rock Springs is a small city on the Union Pacific Railroad, in the southwest part of the State and is the rail point for the Baxter Basin Field, sometimes termed the Rock Springs Field, as Rock River is the rail point for the field of that name. Rock Springs is near the center of Sweetwater County.

The Rock River Field is an oil field, also producing some gas which is handled through a gasoline absorption plant. The Baxter Basin Field, wrongfully termed the Rock Springs Field, is gas only, the product is piped to Rock Springs by the New York Oil Co. where the gas is furnished to the town. The Producers & Refiners Corp. laid this line and leased the output of their wells to the New York Oil Co.

Rock River, therefore, is the correct name of the oil field in eastern Carbon County, and the Baxter Basin Field is the correct name of the gas field south of Rock Springs. The stream known as Rock River is so classified on the maps and should not be termed Rock Creek.

Since the completion of the deep well in Salt Creek to the Tensleep sand which flowed hot water, the camps and homes in the Midwest area of the field have taken on a new aspect. This year the dwellers of that desert waste have had all the water they wanted and instead of sage brush and sand around the houses, flowers bloom and vegetable gardens show green in all directions. No longer does the lack of water make the officials scratch their heads.

Salt Creek Completions

Ten new completions were recorded for the Sunburst Field the past week. Only four are producers and these four are rather small in size; the others are dry holes. The market for Sunburst crude was boosted by the purchasing companies the past week, 10 cents, and the price now stands at $1.35.

The small wells which have marked the completions in the Sunburst Field, together with the cold weather of fall, has tended to stop work in the field and this has also affected production. The field has dropped from around 25,000 bbls. to about 19,000 bbls. daily in the past three weeks due to the decline of some of the larger wells in the southeast part of the field.

The case of Henry A. Miller versus the Consolidated Royalty Co. over certain tracts in the Salt Creek Field was decided in favor of the Consolidated Royalty Co. the past week in the Federal Court at Cheyenne. This case was an effort on the part of Miller to obtain

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SEASON'S OPERATIONS IN CANADA FAIL TO GET ANTICIPATED RESULTS

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ont., Oct. 9.—With the end of the drilling season approaching, development work in the Canadian West has apparently failed to secure all the results that were anticipated earlier in the season, but has got some encouraging results.

Throughout 1926, interest has very largely centered in the Turner Valley Field southwest of Calgary. At the beginning of the season, in addition to the wet gas production secured by a number of wells in the upper horizons, one test, the Royalite No. 4, had got a big commercial production of wet gas and crude naphtha in the Madison limestone at 3,740 feet. The Royalite discovery of commercial production in a horizon where none was expected had, at the beginning of the present year, stimulated other companies to undertake deep drilling tests, and last March several of these were well advanced.

Since then, these additional wells have secured wet gas and crude naphtha or crude oil production in approximately the same horizon in the Madison limestone. McLeod Oil Co. No. 2, LSD 16, Section 1-20-3w5, got production at 3,772 feet but owing to a fishing job has so far been unable to finish the well or determine the exact production. With the tools loose it made as high as 17,000,000 feet a day, with an estimated potential production of 250 bbls. a day of crude naphtha, but with the tools frozen in the hole the wet gas production stands around 3,000,000 feet a day, with some incidental gasoline.

Illinois-Alberta Oil & Refining Co., LSD 14, Section 12-20-3w5, is going down with a diamond drill test and has definitely penetrated the wet gas sand in the Madison, with the promise of a big producer. Vulcan Oils, Ltd., LSD 11, Section 13-20-3w5, at 4,930 feet, and apparently much lower on the structure than the other deep wells, has got the corresponding sand in the Madison, with an initial showing of 3,000,000 feet of wet gas, and a fair production of light crude oil, claimed to be around 49 gravity.

These four producing wells are strung over a distance of about a mile, which would indicate that the deep lime production is general over a considerable portion of the field. Royalite No. 4 is so far the largest producer, and the only one for which definite figures are available; it has now maintained its production practically undiminished, over a period of two years.

Watching Vulcan Test

Interest at present centers in Vulcan Oils No. 1, largely owing to its prospect of developing a real crude oil production. It is now being drilled in, but before drilling resumed it started spraying light oil from the casinghead. Four 100,000-gallon storage tanks and a Smith separator are being set up. If the Vulcan, about 1,400 feet lower on the structure than Royalite No. 4, produces crude oil, it will materially improve the prospects for a field. The immense wet gas production encountered in the few deep wells already drilled has created a difficult problem for operators, it being im-

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More Huntington Beach Completions

Four or Five Being Prepared for Production Tests and a Dozen Additional Scheduled to Be Cemented

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Oct. 9.—Several additional deep zone wells were finished in the southwest extension of the Huntington Beach Field during the week and, while only three were actually turned loose, four or five more are being prepared for production tests, with something like 10 or 12 scheduled to be cemented within a few days. The new wells put on production were E. J. Miley's No. 4 Pacific Electric, the Standard's No. 1 Anderson and No. 3 Huntington of the Wilshire Oil Co. Miley's No. 4 Pacific Electric, his second deep zone completion in this area, came in flowing 1,550 bbls. of fairly clean 25.1 gravity oil from 4,007 feet, the hole being finished with a 6¼-inch oil string. Miley's original deep zone completion, No. 2 Pacific Electric, which came in a week or 10 days ago flowing 2,000 bbls. a day from 3,834 feet, is averaging 1,500 bbls. a day with clocklike regularity. Miley's next deep sand well will probably be No. 1 Pacific Electric, originally finished in the shallow sand, but taken off production a short time later and started down to the more prolific horizon. This well, going ahead at 3,950 feet, is scheduled to be cemented within a day or two

The Standard's first deep zone well in the southwest extension, No. 1 Anderson, is credited with an initial daily production of 1,120 bbls. of clean 25.4 gravity oil from 4,032 feet. The Standard expects to add another deep sand well to its producers within a few days, as a 6¼-inch combination string was being run in No. 3 Huntington this morning. The company also has several other potential producers coming up on this property, but it will probably be two weeks before they will be in a position to make a bid for production. In addition to the 10 drilling wells on the Huntington lease at present, the Standard has rigs going up for 10 more on this property and is hauling in material for two derricks to be located on the bluffs just back from the ocean and paralleling the Pacific Electric's right of way.

The Superior had the stage all set for a nice well, but unluckily its No. 1 Gilmore proved to be a wet job and will require another cementing. The company set an 8¼-inch combination string and, while the well flowed for some time at the rate of 2,000 bbls. a day from 4,007 feet, 50 per cent was water. The Superior is running eight strings of tools in the extension and is erected four more derricks. The Wilshire's successful completion, the company's second deep sand producer in the extension, came in flowing 905 bbls. daily from 4,001 feet and, although the output is cutting around 10 per cent, it will probably clean up after the well has been on production a few days. The Wilshire has two more wells which will probably be tanking oil soon, and they will probably be followed by three more. The Paragon's No. 1 Lewis is drilling ahead in the lower zone at 3,620 feet and, although its No. 1 Schwartz is looking good in the upper sand at 3,180 feet, it is believed both will be carried direct to the lower horizon.

Nearing Completion

The Petroleum Securities has eleven wells headed down to the deep sand and, since all have passed the 3,200-foot level, it is probable the company will finish four or five within two weeks. George F. Getty's No. 5 Huntington, standing cemented at 4,000 feet, will probably come in within a few days and should register an initial flow somewhere around 800 bbls. daily. The California Petroleum has five wells below the 3,500-foot level and may finish two within 10 days. The McKeon Oil Co. finished work on its No. 1 Huntington at 3,986 feet, and from all indications it will probably be good for around 600 bbls. a day.

The Julian Petroleum got off to somewhat of a late start and, although this company is running nine strings of tools in the extension, only three are deep enough to have any immediate effect on production. They are No. 1 Lambert at 3,400 feet, No. 1 Davis at 3,300 feet and No. 1 Treat at 3,350 feet. The balance vary in depth from 500 to 2,000 feet. Hogan & Lytle are making fairly good footage in their No. 1 Huntington and, since it is in the oil sand at 3,800 feet, it should come into production soon. The Black Diamond Oil Co. and the United States Royalties should also be in a position within a short time to finish new wells, as each has only a few hundred feet to go. The California Petroleum picked up the pay in No. 2 Buck, north of the old field. No. 2 Buck, 300 feet north of No. 1, which extended the limits of the field about a mile northward, was approximately 100 feet deeper than the discovery, tending to indicate the structure at this point is plunging to the north. The Standard's No. 23 Bolsa, west of the Buck property, has turned out to be somewhat of a deep test, as it is already down 6,620 feet, the prevailing formation being a sticky shale.

Ventura

There were no new wells finished in the prolific Ventura Avenue Field, but one or two are scheduled for completion before the close of another week. The General Petrolum's No 4-A Barnard is showing exceptional promise at 5,660 feet and might come in prematurely at any time, although the hole is being packed off with hematite in an effort to keep the well under control until the 6,000-foot level is reached. No. 2 Barnard is in the oil sand at 5,644 feet and, while it is not showing as much life as No. 4-A, it should, nevertheless, prove a fairly large well. The General Petroleum is working on five others, three being below the 4,000-foot level.

The Associated is reaming two holes on the Lloyd lease, No. 38 at 5,437 feet and No. 45 at 5,335 feet, preparatory to landing a string of pipe and, while both will be carried down a little further, the additional hole required will probably not take more than two or three weeks. No. 32 Lloyd is showing plenty of kick at 5,590 feet and should also appear on an early combination report. Unusual precautions are being taken to minimize the possibility of No. 17 Lloyd getting beyond control and, although this well only registered an initial of 725 bbls. daily from 5,201 feet when originally finished in September, 1925, present indications point to a big producer when it is recompleted. Production of the well fell off to such an extent during the past few months that the company found it advantageous to deepen it. The hole has accordingly been carried down to 6,045 feet and, while it is the present intention to continue drilling, this depends entirely upon whether it can be done with safety.

On the Hartman property, the Associated has two drillers, the deepest and most interesting No. 5, at present in the oil sand at 4,700 feet. The company's No. 1 McGonigle, in the extreme eastern part of the field, picked up the oil sand last week, and a string of 8⅝-inch has just been cemented 52 feet off bottom, 5,312 feet. The Shell's most promising potential producer is No. 9 Edison, reported down 6,005 feet a few days ago. No. 7 Edison is being delayed with mechanical trouble at 5,601 feet, but it is believed this difficulty will be remedied quickly. The company is cleaning out No. 11 Gosnell at 3,770 feet, the bottom being at 5,917 feet, and should be in shape for a production test within three weeks. No. 13 Gosnell, at present down 5,250 feet. No. 12 Taylor at 5,170 feet and No. 14 Taylor at 5,450 feet are other potential producers of the Shell expected to be on production within 30 days.

Being Deepened

The Bolsa Chica, upon re-entering No. 1 Hartman, which was killed so the well might be deepened, found most of the lower part of the hole had become plugged tight with mud and hematite. This well blew in prematurely several weeks ago and has been producing under a handicap, as it apparently never cleaned itself out. It is being carried down to the 6,000-foot level and, although the bit is still about 200 feet off bottom, the company should begin making new hole within a few days. The Ventura Associates Oil Co. is making fairly good footage, and it is the intention to land a string of 15-inch. G. J. Magenheimer is contemplating abandoning No. 1 Hartman because of mechanical trouble at 3,737 feet and skidding the rig to a new location. There is a decided tendency on the part of operators in this field to engage in deeper drilling, and it is possible that one or more wells will be producing from the 7,000-foot level by the end of the year if the oil sand extends down to that point. The General Petroleum does not have very many more locations in this field to drill up, and it is believed the company will undertake to deepen several relatively small upper zone producers as soon as its present drilling campaign has been concluded. The Associated and Shell are concentrating work along the edge of their respective leases to prevent any drainage, and consequently have only

(Continued on Page 122)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, Well, Location—	S	T	R	Depth	Status—
Union, No. 1 Bryant, Seal Beach	2-	5-	12	5,600	abandoned
Marine, No. 1 Strong, Bellflower	24-	3-	12	5,190	cemented
Feather, & Preston, No. 1 Blinn, Clearwater	16-	3-	12	4,185	suspended
Union, No. 1, Howland, El Segundo	24-	2-	15	5,238	br. sh. drilling
Smith, Pet. Co., No. 1 Johnson, Hawthorne	17-	3-	14	4,710	gr. sd. drilling
Associated, No. 1 Cypress, Inglewood	34-	2-	14	4,040	oil sand cemtd.
Dominguez Extension, No. 1 Compton, Dominguez	22-	3-	13	800	sd. drilling
Riner, H. E., No. 3 McDermott, San Bernardino	32-	2-	8	600	hd sd. drilling
Milham Explor., Well No. 2, Del Rey	34-	2-	15	6,100	hd. sd. unfav.
Barnsdall, No. 1 Merlo, Puente	35-	1-	11	4,503	abandoned
Petroleum Sec., No. 1 Sesnon, San Fernando	14-	2-	16	4,200	hd. sd. drilling
Standard, No. 1 University, San Fernando	15-	2-	15	4,209	set 10-inch
Standard, No. 1 Austin, Topango	11-	1-	17	1,655	sd. sd. drilling
Union, No. 1 Saugus, Saugus	15-	4-	16	4,180	br. sh. drilling
Union, No. 2 Olinda, Orange County	10-	3-	9	5,830	unfavorable
Oceanside Oil Co., No. 1 Pacific, San Diego	23-11-		5	3,126	cleaning out
Halfhill Packing Co., No. 2 Jeffries, Burbank	2-	1-	15	1,250	suspended
So. Calif., Drlg. Co., No. 1 Matteson, El Segundo	1-	3-	15	125	hd. sd. drilling
Calif. Pet. Dev., No. 1 Spitz, Capistrano	2-	8-	8	2,096	gr. sd. suspended
Petroleum Sec., No. 1 DeBaker, Bandini	18-	2-	12	1,265	sd. sh. drilling
Van Nuys, No. 1 Community, Van Nuys	.....	.....	.....	3,860	hd. sd. drilling
Julian, No. 1 Mosier, Athens	12-	3-	14	800	sd drilling
General Pet. No. 1 Lomita, Sunset Beach	19-	5-	11	.....	mtl., building rig
Johnson, Geo. W., No. 1 Wickham, Los Angeles Co.	32-	5-	17	.....	mtl., building rig

IMPORTANT NORTHERN CALIFORNIA WILDCATS

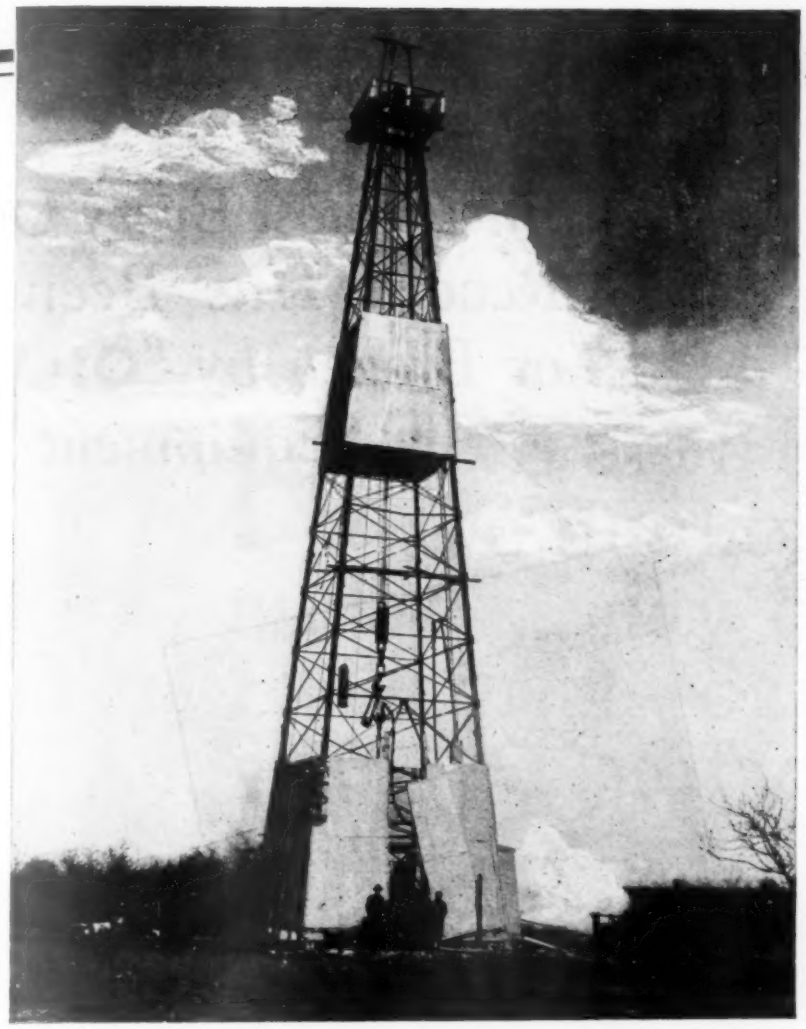
Taylor, W. W., No. 1 Clovis, Fresno County	5-13-22	1,360	hd sd. drilling	
Associated, No. 2 Huron, Fresno County	20-19-17	1,480	clay, drilling	
Federal Explor., No. 1 Kinsella, Tulare County	15-22-24	3,250	br. sh. gas show	
Bolsa Chica, Well No. 2, Kettleman	30-23-18	2,360	oil sand, testing	
Marland, No. 1 Elliott, Kettleman	12-22-17	5,600	gr. sd. drilling	
South Coalinga, Well No. 1 Kettleman	35-24-19	1,390	set 12½-inch	
Shell, No. 1 Berlywood, Moorpark	32-	3-20	6,510	unfavorable
C. C. M. O., No. 1 Hobson, Ventura County	22-	3-24	5,855	bad fish, job
Milham Explor., No. 1 Sexton, Ventura County	19-	3-22	3,188	hd. sd. drilling
Milham Explor., No. 1 Buttonwillow, Kern	8-28-23		905	bl. sh. drilling
Standard, No. 1 Palmer, Santa Barbara	13-	9-23	2,920	hd. sd. drilling
Standard, No. 1 Carmarillo, Ventura County	29-	2-20	2,919	conglom. drilling
Pan American, No. 1 White, Monterey County	27-23-13		2,638	fishing
Pyramid, No. 1 Trescony, Monterey County	26-21-	9	3,080	gr. sd. drilling
Shell, No. 1 Murphy, Petaluma	29-	5-	6	2,890
Miley Explor., No. 2 Casitas, Ventura County	7-	3-25	623	sd. drilling
Miley Explor., No. 1 Goleta, Santa Barbara	3-	4-29	.....	rig, rigging up
Rio Grande, No. 1 Canet, Ventura County	9-	3-23	1,758	cemented
Sentinel, No. 1 Tejon, Ventura County	5-	3-17	562	suspended
Woodward & Sheedy, No. 1 Famosa, Kern County	29-27-26		2,470	bl. sh. drilling
Henderson Pet., No. 2 Piru, Ventura County	33-	5-18	1,150	sd. sh. drilling
Ozena, No. 1 Allensworth, Tulare County	26-24-42		510	hd. sd. drilling
Union, No. 1 Gill, Famosa	8-28-27		505	hd. sd. drilling
Parkford, E. A., No. 1 Strathern, Ventura	.....	.....	.....	rig, rigging up
Star Petroleum, Well No. 1, Ventura	13-	3-23	.....	rig, rigging up
Associated, No. 2 Kerman, Fresno County	36-13-16		.....	mtl. building rig

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This Week	Daily Average	Total Last Week	Daily Average	This Yr. to Date	Same Time Last Year
Crude oil	74,269	10,610	75,307	10,758	9,128,711	11,517,944
Fuel and gas oil	170,866	24,409	295,544	42,221	8,089,350	237,873
Gasoline	80,959	11,566	76,842	10,977	5,549,577	6,255,490
Tops	.....	.....	.....	.....	147,149	484,650
Coastwise:						
Crude oil	682,739	97,534	303,448	43,350	17,835,082	25,023,073
Fuel and gas oil	183,000	26,143	181,259	25,894	8,263,818	8,866,743
Gasoline	85,572	12,225	130,165	18,595	5,692,994	4,089,388
Kerosene	3,325	476	2,345	335	199,889	249,428
Tops	.....	.....	.....	.....	620,124	144,256
Exports:						
Crude oil	163,384	23,341	129,758	18,537	4,503,396	1,786,864
Fuel and gas oil	366,466	52,352	580,138	82,877	13,998,318	11,791,819
Gasoline	148,645	21,235	.....	.....	3,895,822	3,081,732
Tops	.....	.....	.....	.....	96,552	170,407
Kerosene	.....	.....	95,871	13,696	1,974,549	1,954,891

TANKER SHIPMENTS, SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Fuel and gas oil	152,218	21,745	78,336	11,191	1,481,836	218,414
Gasoline	.....	.....	.....	.....	758,222	1,036,369
Tops	.....	.....	.....	.....	229,775	794,918
Lubricants	.....	.....	.....	.....	335,228	235,533
Coastwise:						
Fuel and gas oil	63,409	9,058	121,154	17,308	3,469,208	3,047,728
Gasoline	.....	.....	118,938	16,991	3,460,439	1,922,226
Kerosene	.....	.....	6,694	956	283,276	145,776
Exports:						
Fuel and gas oil	78,906	11,272	.....	.....	2,608,071	1,979,685
Gasoline	154,024	22,003	58,785	8,398	1,379,490	459,361
Kerosene	4,093	585	75,210	10,744	1,541,864	817,463
Lubricants	.....	.....	.....	.....	8,759	243,429



MOORE
TUBULAR STEEL
DERRICKS

Double Strength With Reinforcing Legs

Moore 96′ Rotary Derrick with reinforcing legs. Lately used for test drilling in Archer County, Texas, completing the deepest test ever drilled with rotary in that territory. Stood the worst punishment without the slightest trouble. Another Moore derrick, now in use at Big Run, Pa., has drilled to a depth of 7060 feet, and is still going strong.

DEEP TESTS

In deep test drilling, the unexpected is always apt to happen. You will be prepared for every emergency if you use a Moore tubular derrick with pipe reinforcing legs. Such a derrick has nearly double the capacity of a single leg derrick, yet its first cost is very moderate.

After the well is completed, the whole derrick, or the reinforcing legs alone, can be moved and used again and again on other locations for drilling or pulling casing.

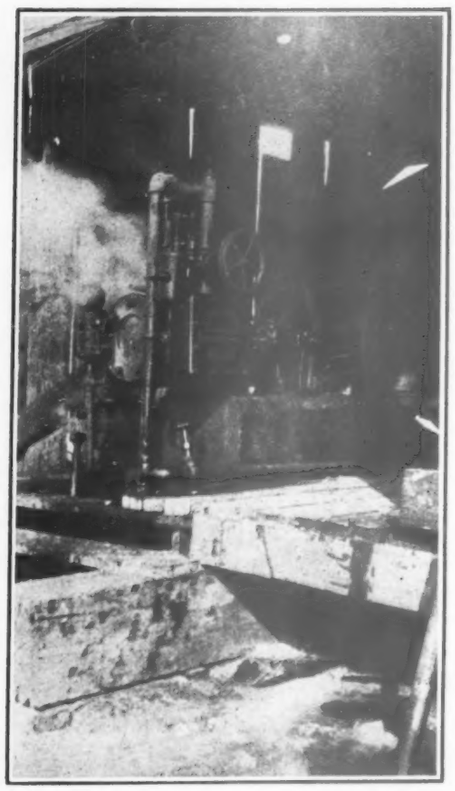
For instance, the derrick illustrated above is shown in its third location, in Archer County, Texas. At one time it supported the weight of 54 thribbles of 4″ drill stem hanging in the derrick. On another occasion, the pipe was frozen and the derrick several times parted the 4″ 12½-lb. drill stem. Such instances are typical of the giant strength of Moore Derricks with reinforcing legs.

LEE C. MOORE & CO., Inc.
PITTSBURGH, PENNA.

Tulsa, Okla. Casper, Wyo. Dallas, Texas
Shreveport, La. Parkersburg, W. Va.

Of Course "OILWELL" Equipme

But Almost Every Oil Fi Record Has Been Me or Broken by "OILWE" Equipment



THIS 10½" x 12" "OILWELL" Steam Engine is the property of McQuiegg Brothers and was manufactured and sold early in 1910. It has been in service more than 16 years. It was used for drilling in the California fields about 10 years; it was then used for 5 years as a pumping engine, after which it was moved to Artesia, New Mexico, where it is now drilling its second well.

The only money spent for repairs during the entire 16 years was for re-babbitting after the engine had been through a severe fire.

HERE are two views of an "OILWELL" Outfit which was purchased in Haynesville, La., in March, 1922. It has just completed its twenty-eighth (28th) well, and the C. E. Ferguson Drilling Company inform us that the only expense they have had was one pinion and pinion shaft for the rotary. The "OILWELL" 66 H. P. Boiler has not cost one cent for repairs, and the original tubes are still in the boiler.

"OILWELL" ESTD. 1862 TRADE MARK REGISTERED

OIL WELL SU

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIQUIP

May Not Always Break Records--

An "OILWELL" Drilling Engine in use for 16 years; no repairs except re-babbitting after a fire.

An "OILWELL" Boiler in use for 4 years; no repairs, and the original tubes are still in the boiler.

An "OILWELL" Imperial Rotary has just completed its 28th well, the only expense being one pinion and pinion shaft.

HERE are a few proofs of the quality, durability, and reliability of "OILWELL" Equipment---or in one word, *service*. Of course all "OILWELL" Equipment may not make or break records, but every piece of equipment is intentionally designed and manufactured to give the best possible value. When you buy from "OILWELL" you are sure of getting *service* unparalleled by any other equipment.

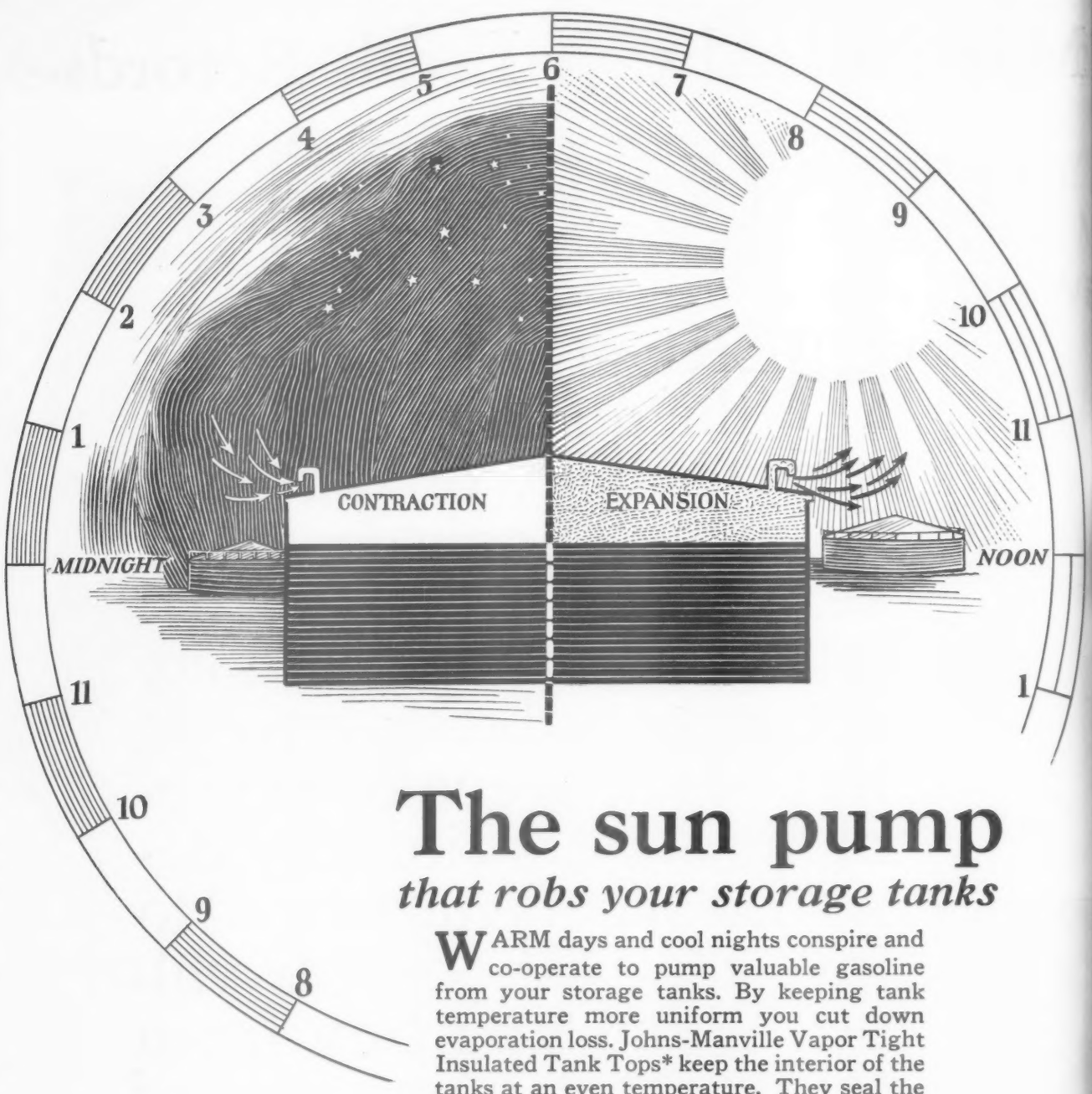
100 Branches located in the principal oil fields

UPPLY CO.

QUIPMENT

BRANCH STORES IN ALL OIL FIELDS

"OILWELL" ESTD. 1862 TRADE MARK REGISTERED



The sun pump

that robs your storage tanks

WARM days and cool nights conspire and co-operate to pump valuable gasoline from your storage tanks. By keeping tank temperature more uniform you cut down evaporation loss. Johns-Manville Vapor Tight Insulated Tank Tops* keep the interior of the tanks at an even temperature. They seal the roof and eaves so that vapor cannot escape by wind drift.

Tanks equipped with Johns-Manville Vapor Tight Insulated Tank Tops* mean real economy.

*Patented, other patents pending.

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Through Asbestos and its allied products
INSULATION
BRAKE LININGS
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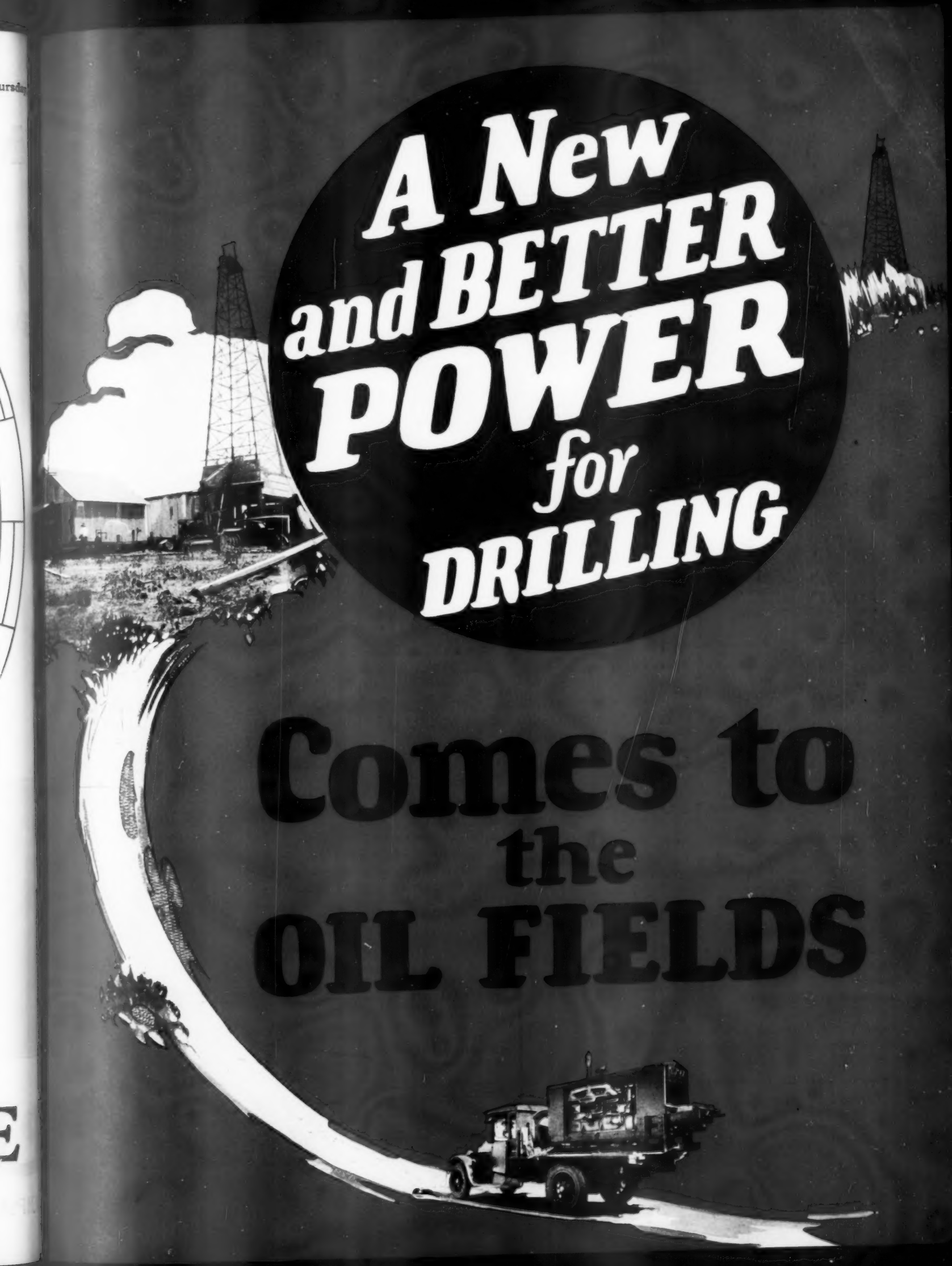
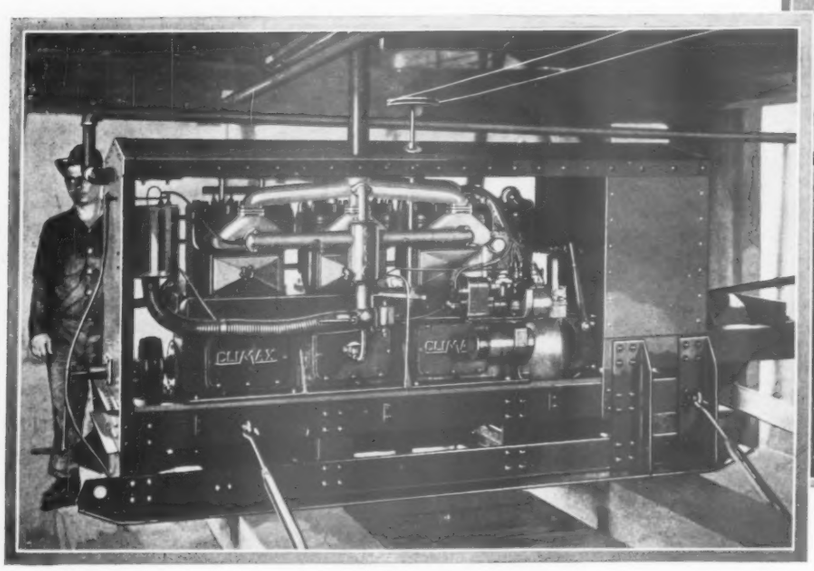
JOHNS-MANVILLE

Oil Industry Department

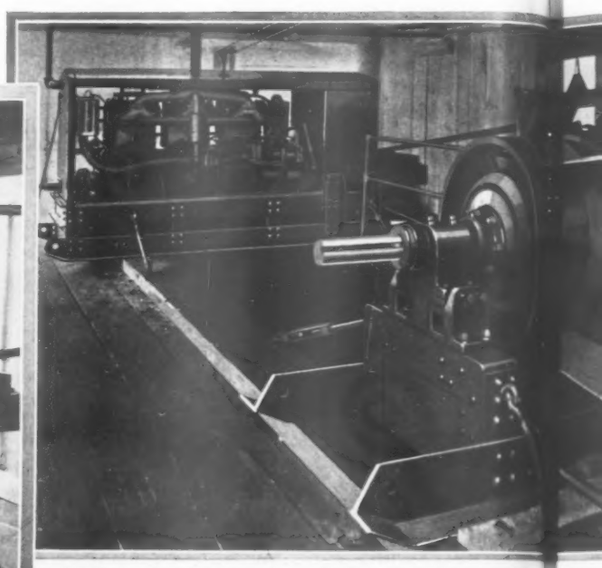

A New
and BETTER
POWER
for
DRILLING
Comes to
the
OIL FIELDS

New!

Because for the first time Gasoline Power is made as Flexible as Steam



Climax Drilling Engine



Photographic Reproduction Showing Both Units in Operation

Here is a complete Portable Gas or Gasoline Drilling Outfit so powerful that it will handle any size of tools and go to any depth. Yet you can load it onto a truck and haul it quickly and easily to any location. When you get it there, no special foundation is required. It can be shifted about on its own steel skids and within a few hours from the time you unload it at the freight station, you are ready for drilling action.

It saves you time in getting on to the job and costs you much less for freight—much less for hauling and setting.

But not until drilling actually starts do you realize the outstanding advantages of this New and Better Power over steam. There has never been anything like it before. It's the combination of the Climax Drilling Engine and the Climax Reversing Clutch that actually gives you the power, flexibility and the drilling motion hitherto thought impossible except with steam.

Think what this Climax Drilling Outfit means where water is scarce or bad and fuel costly. It ends all boiler troubles—cuts labor costs—completely solves both fuel and water problems. Under such conditions, Climax Cable Drilling Power is, of course, a necessity. But under all other conditions you will find it to be the most efficient, economical and dependable power for cable drilling that ever entered the oil fields.

Write for Bulletin H

Let actual performance records prove these facts.

CLIMAX ENGINEERING COMPANY, 32 W. 18th Avenue CLINTON, IA.

On the job the Climax Drilling Outfit—

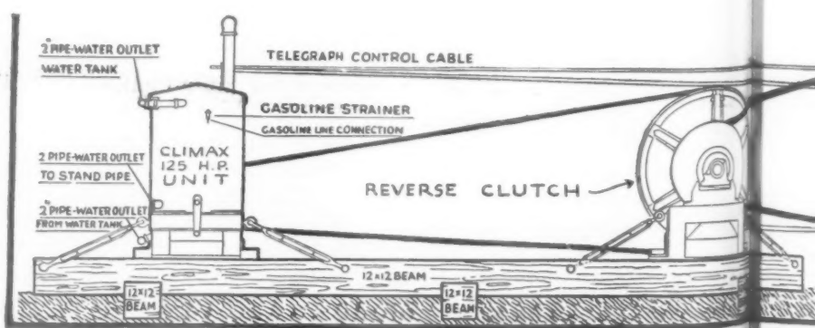
—Is actually as flexible as steam
—Gives ideal drilling motion
—Handles any size of tools and goes to any depth
—Stalls when tools stick—same as steam
—Uses less than ½ bbl. of water per 24-hour day
—Operates on 70 to 80 gallons of gasoline per day.

CLIM

TRADE MARK U. S. PAT

Drilling Engine

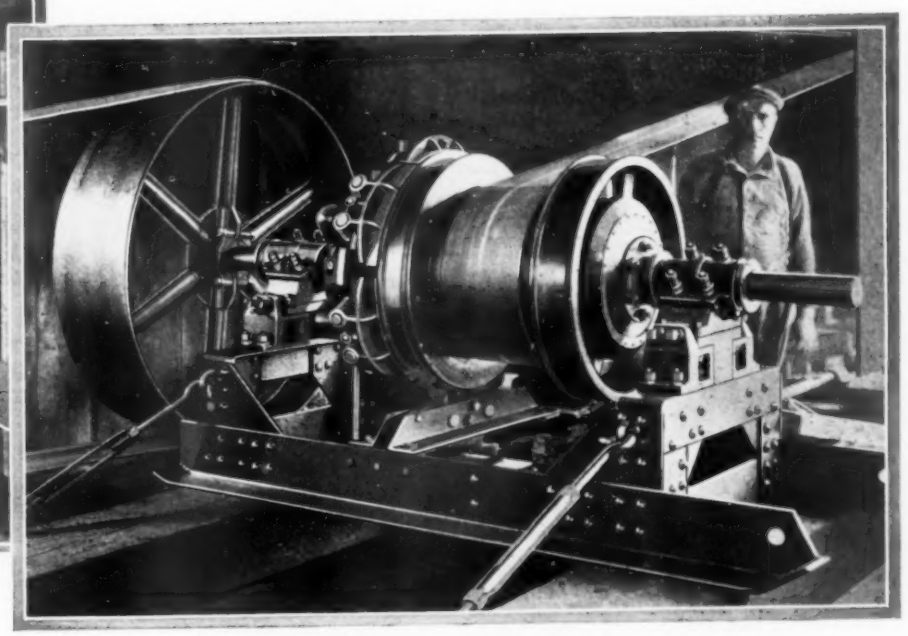
6 Cylinder, 6x7 in. Climax Engine equipped to use gas or gasoline. Equipped with electric starting motor, vacuum feed fuel pump, built-in governor, water pump, ignition equipment, telegraphic control, etc. Driving pulley 17-in. diameter, with 12-in. face. Extension on drive shaft for forge drive pulley. Engine mounted on structural steel skid frame. Weight 5,400 lbs.



CLIMAX DRILLING UNITS

Better!

Because actual records of performance prove it is Faster and Cheaper in Drilling



Climax Reverse Clutch Unit

Pen sketch showing general layout and location of Climax Cable Drilling Units on the job.

h Units ation

LIMAX

TRADE MARK U. S. PAT. OFF.

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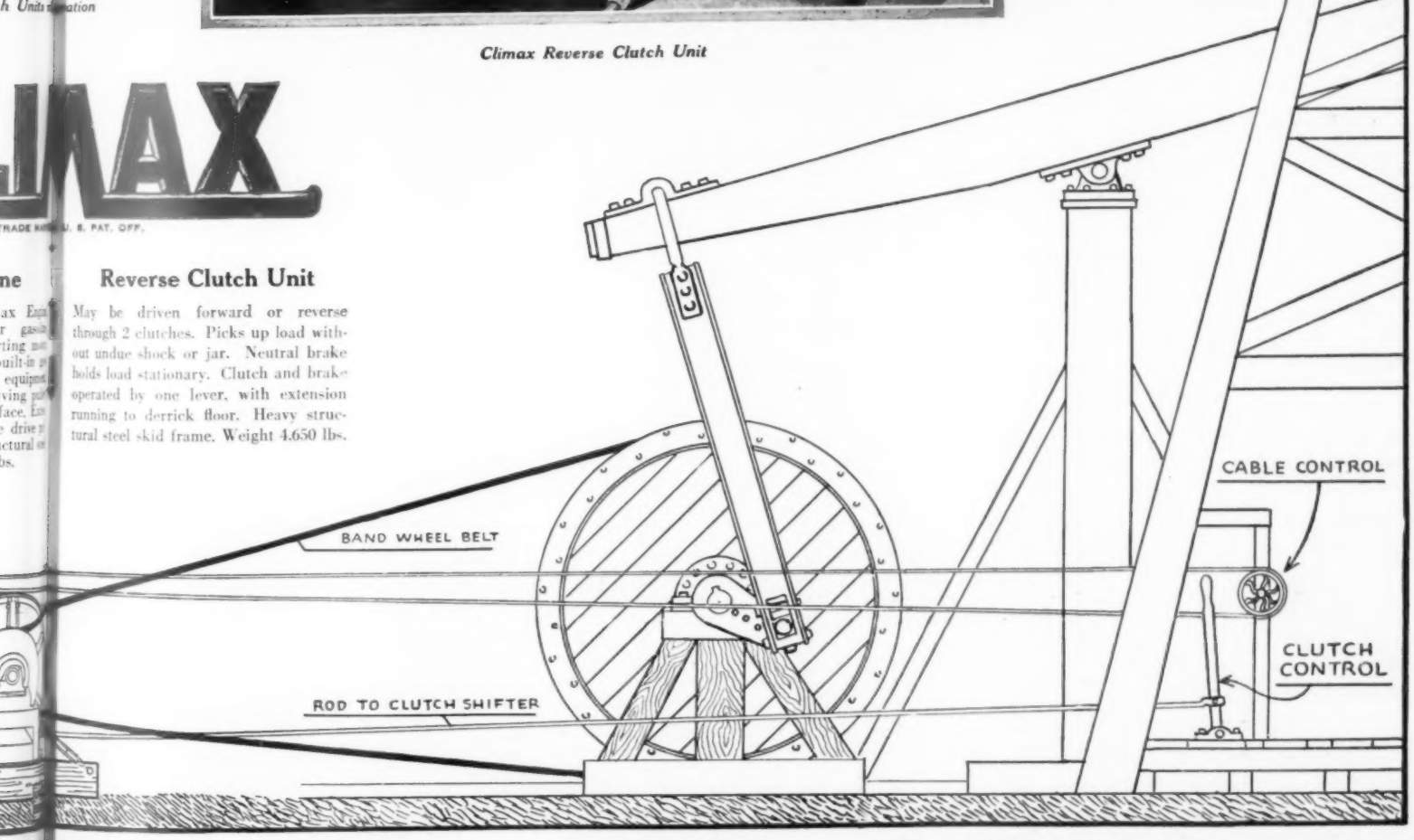
Reverse Clutch Unit

May be driven forward or reverse through 2 clutches. Picks up load without undue shock or jar. Neutral brake holds load stationary. Clutch and brake operated by one lever, with extension running to derrick floor. Heavy structural steel skid frame. Weight 4,650 lbs.



UNITS FOR EVERY STANDARD RIG

Herbert Oil Co., Fort Worth, Texas, says—

"The Ultimate Has Been Attained"

Helmerich & Owen, Drilling Contractors

Tulsa, Okla., write—

"After using your six-cylinder CLIMAX engine for seventy days on our McGregor Well No. 1 in Haskell County, Texas, we thought you might be interested in knowing what success we are having.

"As for operation, we find it to be very simple and that *any man*, with average mechanical knowledge, in a couple of days' time, *can operate it* with the *same efficiency that he can steam.*

"We also find the CLIMAX to be *durable* in every respect. We have not experienced any loss of time, whatsoever, due to engine trouble.

"The *cooling*, starting and *lubricating* systems all *work perfectly.*

"Heretofore, our trouble with gas engines has been to get the proper motion on tools, but it seems the builders of the CLIMAX have eliminated this undesirable feature, as our power seems to be as *flexible as steam.*

"For economical operation, we find it to be everything you claim. Our books show that our *fuel costs* are approximately *$600.00 per month less* than on wells we are operating with steam boilers and engines and using fuel oil."

General view of derrick and engine house at Bu-Vi-Bar Petroleum Co., Harper County, Kansas, 10 miles southeast of Anthony, Kansas. Using 24-inch tools at a 4,500-foot well.

Natural gas supply tank with line leading to gas mixer on Climax Drilling Engine used by R. J. Wallace, Drilling Contractor, on O. Handley No. 1, Section 13, Block 28, Westbrook, Mitchell Co., Texas. Drilling for the California Company.

General view of derrick and engine house Bu-Vi-Bar Petroleum Co., Pawnee, Okla.

Use This Coupon or Wire for Full Information

and Name of Distributor Nearest You

Climax Engineering Co.,
32 W. 18th Ave., Clinton, Iowa.

Gentlemen:

Send me Free Bulletin H describing your Climax Cable Drilling Units.

Also give me a list of installations where I may see these Units in operation.

Name .....

Address .....

.....

Operating in..... .....*Field*

Climax Cable Drilling Units were developed under the supervision of practical oil field men. They provide what has never been provided before by any gasoline power outfit—abundant power with all the flexibility of steam and with ideal drilling motion on the tools.

Oil field operators who have long been prejudiced in favor of steam are now enthusiastic over this great engineering achievement. No other event in the last decade has meant more to the industry.

Free Bulletin H tells you all about these remarkable Units.

Write, wire or send coupon for it today. Get the facts. Let us give you first-hand records of performance. Let other operators tell you of the tremendous savings and other advantages they have found in this New and Better Power for Cable Drilling.

Climax Engineering Co.

32 W. 18th Ave. **Clinton, Iowa**

Mid-Continent Field Headqrs: Tulsa, Oklahoma, Wells Hotel.

California Field Headqrs: Coast Machinery Corp.,
464-66 E. 3rd Street, Los Angeles, Calif.

Chicago Branch: 2007 Harris Trust Bldg., Chicago, Ill.
Eastern Branch: 30 E. 42nd St., New York, N. Y.
Cleveland Branch: 657 Leader Bldg., Cleveland, Ohio.
San Francisco, Calif.: Coast Machinery Corp., 829 Folsom St.

Berne Field, Indiana, Most Active

Good Completions Stimulate Operations. Lawrence County and Martinsville, Clark County, Illinois, Busy

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Oct. 11.—The heavy storms and winds did not appear to affect development work over the Central West Field during the week and a large number of new wells were brought in. The only well of note in the Lima Field was the No. 2 on the Ira C. Schick farm, in the Roundhead Field of Hardin County, for 35 bbls. initial from the Trenton.

Indiana is making an excellent showing of late and a considerable acreage is being leased up around new and recent completions. In the Berne Field of Adams County, in the Trenton Rock area, Alvin C. Spindler's test on the R. T. Wilson lease, Section 7, Jefferson Township, is reported showing for 70 bbls. initial. Mel S. Daugherty's No. 1 on the Mrs. Bert Parr farm, Section 12, Wabash Township, same county, reported at 50 bbls. initial. Paul Schulte and others' second test on the Lugabill lease, Section 20, Blue Creek Township, same county, shows around 40 bbls. In southwestern Indiana, J. Morrisey and others' initial well on the Will Miley lease, Section 14, Logan Township, Pike County, is reported at 35 bbls., while Davis, Miller & Whitlock's No. 1 James Wilson lease, same area, is showing for 40 bbls. Pierce Cavanaugh's test on the Allison lease, Section 26, Veale Township, Daviess County, is good for 15 bbls. These new developments in both parts of the Hoosier State, should bring about a more active development with a steady market for the crude.

In the old producing area of Dennison Township, Lawrence County, in the Illinois Field, the Ohio Oil Co.'s No. 7 Ellen Lutz farm, Section 21, is reported at 75 bbls. initial production, while H. E. Ferriman and others' No. 3 W. D. Slater lease, Section 31, Martinsville Township, Clark County, produced an initial of 35 bbls. from the Niagara formation at a depth of 1,601 feet, or more than 100 feet below the stray sand, which has been such a heavy producer in that particular area.

The central Ohio gas field maintains its usual activity with only average producers of both oil and gas.

Lima Field

Only seven completions were reported during the week in the old Lima Field of northwestern Ohio and they were scattered over seven counties. The best well for the week was the Boston-Southwestern Oil & Gas Co.'s No. 2 on the Ira C. Schick farm, in the Roundhead Field of McDonel Township, Hardin County, 250 feet from the north line and 750 feet from the west line of the lease, showing an initial production of 35 bbls., with sand topped at 1,439 feet and drilled 58 feet in. A well of equal production was credited to Cynthian Township, Shelby County, where the Wittmer property trustee's No. 2 in the southeast corner of the M. and J. Siegel farm, in the southwest quarter of Section 15, was brought in. Sand was struck at 1,297 feet and drilled 40 feet in.

In the Elmore Field of Harris Township, Ottawa County, the Ohio Oil Co.'s No. 4 well in the northeast corner of the A. F. Alyn farm, Section 19, is credited with being good for 12 bbls. Sand at 1,267 feet and total depth 1,376 feet, or 109 feet in the sand.

A. W. Neely and other's No. 6 in the northeast corner of the Adams Fecher farm, Section 24, Recovery Township, Mercer County, had an initial production of 8 bbls. from a total depth of 1,192 feet, or 54 feet in the Trenton sand.

Home Banking Co.'s No. 11 well, 1,000 feet from the south line and 400 feet from the west line of the August H. Taulker farm, Section 24, Madison Township, Sandusky County, pumped 8 bbls. from the sand at a depth of 1,307 feet, or 70 feet in the sand.

The Halcyon Oil & Gas Co. drilled a test 325 feet from the north line and 900 feet from the east line of the J. E. Bowsher farm, mapped as the Israel Bowsher farm, in the southeast quarter of Section 27, Amanda Township, Allen County, the well showing an initial production of 4 bbls. This test shows a large amount of salt water.

The Oko Oil & Gas Co., one of the aggressive development companies in Wood County, ran up against a duster in a test in the southeast corner of the J. J. Heilman No. 2 in the northwest quarter of Section 29, Perrysburg Township, Wood County. Top of sand found at 1,256 feet and water at 50 feet in the sand to a total depth of 1,306 feet. This company has two additional wells in the same area due for completions. This is a couple of miles east of the Dixie Highway and several miles almost directly south of Perrysburg toward Bowling Green.

Drilling a Test

Bert Sheldon, driller and contractor of Dunkirk, Ohio, is in charge of what would be called the drilling of a wildcat well. This test is on the William Kurtz farm, near the hamlet of Patterson, north of Kenton, in Hardin County, in the vicinity of an old time gas field known as the Patterson gas field, and is being drilled to determine whether or not oil is contained in the large gas producing area. Numerous gas wells have been drilled in the territory and have been producing for 35 years.

Indiana

Forging ahead rapidly as one of the most active spots in the Trenton Rock area of Indiana, the New Berne Field in Adams County is growing daily. Three new completions have been made during the past week. Paul Schulte and others' No. 2 on the Edward Lugabill farm, Section 20, Blue Creek Township, came in with an initial production of 20 bbls. Alvin C. Spindler, well known Pittsburgh, Pa., oil operator, drilled in his test on the Dr. R. T. Wilson 39 acres, Section 7, Jefferson Township, same county, estimated at 70 bbls. initial. This well also showed more than 1,000,000 feet of gas after given a shot. This well is a direct offset to the recently completed well of Harmon & Watts on the Smitley lease. So pleased with the results of the showing of the well was Mr. Spindler, he immediately purchased the farm in fee, and staked two more locations to start drilling as fast as the material can be brought to the lease.

Mel S. Daugherty, of Washington Court House, Ohio, and W. M. Kelly, of Geneva, Ind., have just completed and shot a test on the Mrs. Bert Parr 160 acres, Section 12, Wabash Township, Adams County, showing for 50 bbls., with an abundance of gas. This test extends the producing area of the field three-fourths of a mile to the southwest and there seems little doubt that the entire territory beween the Geneva Pool and the Berne Field has been proven.

Oil scouts for the larger producing companies and individual operators are scouring the Adams County area for acreage. There are 14 strings of drilling tools running in the field with several additional machines on the way and there are now 32 producing wells with no dry holes to date.

The new wells due for completion in Adams County are the No. 6 Niblick of J. H. Harmon and others, in Section 5, Jefferson Township; McKelvey & Rendall's No. 2 William Bollenbacher, same section; Robert Maybeer's test well, drilling on the southeast edge of Berne, on the John Hilty 101 acres, Section 4, Wabash Township. Should this last well prove productive it will add thousands of acres to the field.

An old well on the Niblick farm, Section 5, Jefferson Township, Adams County, owned by J. H. Harmon and others, which was thought to be lost by fresh water breaking through casing nearly a year ago, was recently equipped with 4-inch casing and packer and after a few weeks pumping has just came onto oil and is pumping a nice production of oil, together with considerable gas.

As the new Berne "Eldorado" now stands, the field itself is proven from the Schulte wells to the northeast to far beyond the Daugherty well to the southwest, a distance of better than 5 miles and gives proven locations for several thousand wells. It is safe to say this new territory with its shallow and inexpensive drilling, its large quantity of good sand, its light green high gravity oil, small amount of pipe used, and the ideal operating conditions existing in the Berne Field, together with the proven staying qualities of the wells, encourages the belief that operators will be active in this new field for a long time to come.

Capitalists of Bluffton, Ind., have drilled in a test well on the John Harris farm, in Nottingham Township, Wells County, finding a real duster.

Southwestern Indiana

In Logan Township, Pike County, in the Oatsville aren, Davis, Miller & Whitlock's second well on the James Wilson lease, Section 14, is credited with an initial production of 40 bbls. J. Morrisey and others' No. 1 on the Will Miley lease, same section, is estimated at 35 bbls. from a depth of 1,390 feet, and they are drilling a second well on the same lease. The Consolidated Oil Development Co. abandoned its No. 6 J. C. McDaniel farm, Section 22, and is drilling No. 5 on the C. Atkinson farm, Section 22. The Noble-Bolyard Oil Co. is drilling No. 10 D. S. Huey farm, Section 21, and P. C. Andrews is drilling No. 7 Enos Loveless, Section 14. In Monroe Township, the Ohio Oil Co. abandoned No. 4 Moses Skinner farm, Section 23, and also pulled out its No. 4 on the Harlan L. Kays farm, Section 14, Patoka Township, same county.

In Gill Township, Sullivan County, the Dome Gas Co.'s well on the Bledsoe farm, Section 28, is a fair gas producer.

In Harrison Township, Knox County, the Murphy Oil Co.'s last well on the W. E. Harrison farm, Section 17, is reported good for 5 bbls. Unknown parties drilled a dry hole in a test on the George Ryan farm, Section 7, at a depth of 1,558 feet. The Western Gulf Oil Co. is drilling deeper its test on the Joseph Keyser farm, in Posey Township, same county.

In Veale Township, Daviess County, the Peak Oil Co.'s second test in the northeast corner of the T. Ragsdale heirs farm, in the southeast quarter of Section 21, which was dry in the regular sand at 970 feet, drilled deeper, striking another sand at 1,135 feet and oil at 15 feet in the new sand at a total depth of 1,150 feet, the well producing an initial

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CENTURY WELL IN TENNESSEE; TWO OTHERS RATED AT 50 BBLS.

By Whit
Staff Correspondent, Kentucky-Tennessee

GLASGOW, Ky., Oct. 19.—Small producers were the result of the drill during the week in nine counties in Kentucky, while Tenneessee comes to the fore with three new completions near Celina, in Clay County, two being rated at 50 bbls. and the other as a century producer, all from the shallow sand. Two of these wells are in the Clark Pool, out a short distance from Celina, while the other is 4 miles to the south of Celina on the Will Pennington land, on the Mill Creek anticline, estimated at 50 bbls., but still drilling for a deeper pay. In the Clark Pool, No. 2. Kelly Thurman farm, is showing for 100 bbls. at around the 500-foot mark, the other being on the Gray farm and estimated at 50 bbls. initial.

Three wells showing around 20 bbls. each were uncovered in the Glasgow Field of Barren County, in the western division of Kentucky, in No. 47 on the Duff farm, No. 14 on the C. B. Jones farm and No. 3 on the Darter Brothers farm. Owensboro wells were rather small compared with previous completions, although there is a large amount of new work under way. The Illinois Pipe Line Co. took over the lines of the Indian Pipe Line Corp., running from near Scottsville and Bowling Green, in Allen and Warren Counties, Kentucky, passing through the Owensboro Field, thence through the southern part of Indiana to Lawrenceville, Ill., which is the terminus of the line, along with the gathering lines through each field. In Indiana this line passes through some very good prospective territory, and recently a large amount of leasing is reported in that part of the Hoosier State, which eventually means numerous test wells.

Pipeline to Clark Pool

The 9-mile extension of the Paragon Development Co.'s pipeline into the Clark Pool in Clay County, Tenn., from its former terminus in Cumberland County, Kentucky, means much for the Tennessee side, and which is now taking oil. In the northern part of Cumberland County, Kentucky, the 14-mile extension of the Paragon Development Co.'s line into the Hopewell Church district from the main line north of Burksville. The pipe is strung all along the right of way, and 6 miles of the line is already laid, and with good weather conditions oil shou'd commence to pass through the line within the next two weeks, possibly by October 15. In the Hopewell Pool, Wood, Haislett, McLennon and Calhoun have 1,750 bbls. to turn in the line from Nos. 1 and 2 Brockman farm, and No. 3 Brockman is being hooked onto the power and No. 5 already for completion. Baird & Hickman have some 1,400 bbls. to turn into the line. The West Fork Field will be hooked onto this extension.

Pipeline Decision

In a criminal proceeding against a pipeline company for creating a public nuisance by permitting oil to escape from its pipes into a creek, the State

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Greene County, Pa., Has 833 Bbl. Well

Licking County, Ohio, Reports 125-Bbl. Completion. Muskingum, Coshocton and Holmes Also on Producing List

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Oct. 11.—Had it not been for the completion of several good producers, one a gusher, at the close of the week, development work in the eastern fields would have been disparaging. West Virginia did not share in the good wells completed, the best not better than light pumpers. For a time, during the early part of the year, the Big Injun sand development in Henry district, Clay County, furnished some creditable producers, but later they have come in small wells.

Best Producers of Week

The old southwest Pennsylvania fields came back with the best producer for the week, or for that matter the best completed during the year in any part of the eastern fields. It is the Consumers Fuel Co.'s second test on the J. S. Rutan farm, located in Morris Township, Greene County. The well produced 833 bbls. from 8 o'clock Saturday morning to 7 o'clock Sunday morning, giving it the record for the good producers completed in that district.

One good and several fair producers were contributed to the completed list by the deep sand territory in southeastern Ohio. The good producer is the Edward H. Everett Co.'s second test on the Byard F. McKee farm, in Hanover Township, Licking County. The well produced 125 bbls. the first 24 hours after completed and shot in the Clinton sand. In the same section and township, the Preston Oil Co. got a 50-bbl. producer when it completed No. 3 on the Ray and Otta M. Vanwinkle farm.

In Section 8, Hopewell Township, Muskingum County, the A. H. Heisey Co. got a producer that placed 65 bbls. to its credit the first 24 hours when it completed a second test on the A. O. Michael farm. In Perry Township, Coshocton County, the Murphy Oil Co.'s No. 3, on the Wheeler Mossholder farm, produced 70 bbls. the first 24 hours and 75 bbls. the second 24 hours. In Section 25, Hardy Township, Holmes County, the Kenrow company got a 60-bbl. producer when it completed a test on the Jesse Cullens farm.

In Section 55, Salem Township, Washington County, Ohio, L. B. Clymer & Co. have completed in the Macksburg 500-foot sand No. 6 on the William L. Schramm farm. It produced 6 bbls. the first 24 hours after the shot.

Light Pumper in Hocking

In the northeast quarter of Section 5, Ward Township, Hocking County, Kachelmacher estate has completed in the Clinton sand a test on the Hogan-Murphy farm. After shot it is not good for more than 6 bbls. a day. The location is 700 feet east of the Murray City Oil & Gas Co.'s production on the Aker heirs' farm.

In Section 8, Lawrence Township, Washington County, J. G. Herlan and others have drilled a test on the Johnston Noland farm into the salt sand, showing for a very light pumper. In Newport Township, same county, Margaret Good and others have drilled a second test on the Margaret Good farm through the first Cow Run sand and dry.

The Mitchell-Smylie Oil Co., Ltd., has completed in the Berea grit a second test on the Amanda J. Palmer farm, in the northwest quarter of Section 30, North Harrison Township, Harrison County. It is showing for a light pumper and has been shot. In Lot 5, Franklin Township, Licking County, Bishop & Hazlett are drilling on the Martha Gutridge farm.

In Fallsbury Township, Section 20, Licking County, the Leonard Oil & Gas Co. is drilling in the sand at No. 3 on the M. R. Moran farm. In Section 21, Sterl C. Brown has started to drill a second test on the H. A. Noland farm.

In Jackson Township, Knox County, the Pure Oil Co.'s test, on the A. L. Mizer farm, is good for 40 bbls. a day. In Section 21, Guy Shafer has a 7-bbl. pumper at a test on the Joseph Chaney farm. No. 2, on the same farm, is good for 6-bbls. a day in the Berea grit. No. 3 is drilling. Inside of the corporate limits of Newark City, W. W. and A. T. Wehrle have a gasser in the Berea grit at a second test on the Burns farm. In Section 2, Franklin Township, Moore & Adams have a very light pumper at No. 4 on the P. L. and Mary E. Wolfe farm. In Section 18, Hanover Township, the Edward H. Everett Co. has the rig completed for a second test on the Felix Claypool farm.

Deep Duster in Guernsey

In Section 5, Cambridge Township, Guernsey County, the Withmer property trustee has drilled a test on the James Caldwell farm through the Niagara lime 3,648 feet, and dry. In the same township, the Ohio Fuel Gas Co. is due in the same formation at a test on the Joseph D. Taylor farm. In this county, the Ohio Fuel Gas Co. is the most active in development work and all told the county has more work under way and starting than any other county in southeast Ohio.

In SW. Section 21, Fallsbury Township, Licking County, Guy Shafer completed in the Berea grit No. 3 on the Joseph Chaney farm, good for 14 bbls. a day. At Bollin Mills, Section 2, Knox Township, Vinton County, the Co-Operative Oil Co. has completed in the same formation No. 3 on the William Beckley farm. It is a very light pumper.

In SE. Section 28, York Township, Morgan County, the Pure Oil Co. has completed in the Berea grit No. 9 on the R. E. Hughes farm, good for 10 bbls. a day. In the northwest quarter of Section 31, Sharon Township, Noble County, J. T. Young & Co. completed in the Berea grit a test on the George E. Radcliff farm. It produced 9 bbls. the first 24 hours after shot. This location is far in advance of production and may lead to the discovery of a new Berea grit pool.

Gasser in Holmes County

In the southwest quarter of Section 12, Killbuck Township, Holmes County, the Leonard Oil & Gas Co. has completed in the Clinton sand its test on the A. E. Patterson farm. It is a gasser good for 2,250,000 feet. In the southwest quarter of Section 21, Jackson Township, Knox County, the Arkansas Fuel Oil Co. has completed No. 18 on the L. V. Dugan farm, good for 10 bbls. a day in the Berea grit.

In the Fisher Pool, Section 16, Alexander Township, Athens County, J. A. Rohnhausen & Co. have completed in the Berea grit No. 4 on the J. M. Wood farm, good for 6 bbls. a day. At Jerseyville, Section 1, Lodi Township, Nezum and others have completed in the same formation a test on the L. M. Blackwood farm. It is a duster. In Lot 159, Fearing Township, Washington County, C. H. Anderson & Co. have a 5-bbl. pumper in the first Cow Run sand at No. 3 on the Charles Rohrer farm.

In Section 7, Franklin Township, Licking County, Smith, Hazlett & Co. completed in the Berea grit No. 7 on the Austin Orr farm, a light gasser.

Morgan County

In the southeast quarter of Section 21, York Township, Morgan County, the Pure Oil Co. completed and shot in the Berea grit No. 5 on the H. C. Nicewanner farm. It produced 20 bbls. the first 24 hours. In Lot 20, Athens Township, Athens County, Clark and others have completed in the same formation a test on the John Dana farm. It is a 3-bbl. pumper.

In Section 21, Union district, Knox County, the East Ohio Producing & Refining Co. has completed in the Clinton sand No. 3 on the W. D. Heaton farm. After standing 72 hours, and without being shot, the hole filled up 100 feet with fluid. It will probably be abandoned. The Pure Oil Co. owns the oil right on this farm.

Washington County

On the Ohio River, Section 23, Newport Township, Washington County, Russell Wright and others have drilled a test on the Fred Reynolds farm through the Big Injun sand and dry. In the same township, G. W. Kesselring's No. 20 on the A. B. Little farm is a 5-bbl. pumper in the Mitchell sand. F. L. Johnson and others have a rig completed for a test on the George G. Bate farm.

In Section 8, Lawrence Township, Washington County, J. O. Herlan & Co. are drilling a test on the Johnston Noland farm. In Newport Township, Margaret Good and others have completed a test on the Margaret Good farm. It is a 5-bbl. pumper. In Grandview Township, the Pure Oil Co.s' test on the H. C. Webber farm is a gasser in the Big Injun sand. In the same township, the Sheets Run Oil Co. is drilling a second test on the David Bennett farm.

West Virginia

Near Pennsboro, Clay district, Ritchie County, the Carnegie Natural Gas Co. having drilled No. 3 on the John Wilson farm through the Berea grit and finding nothing, has now drilled it through the Gordon sand with the same result, a duster. In Murphy district, W. A. Bickerstaff & Co. and others have a gasser in the Big Injun sand on the Fairview M. E. Church lot.

The Pittsburgh & West Virginia is due in the sand on the A. H. Megill farm, in Union district. In the same district, E. E. Zinn & Co. have a 5 bbl. pumper in the same formation at a test on the M. Prunty farm. In Central district, Doddridge County, the Philadelphia Oil Co. is drilling a test on the Walter Williamson farm and a local company is drilling a test on the Lee Boyce farm. In Grant district, Ritchie County, Maxwell & Charter are drilling a test on the A. B. White farm. In the same district, the Hope Construction & Refining Co. has a rig up on the Mary Renos farm and made a location on the S. Tennant farm.

In West Union district, Doddridge County, the Clifton Oil & Gas Co., has completed No. 14 on the Flora Freeman farm, good for 5 bbls a day in the Big Injun sand. In Union district, Ritchie County, Kerr Brothers have a very light pumper in the Maxon sand at No. 18 on the J. T. Owens farm.

Ritchie County

In Grant district, Ritchie County, David French's test on the Alvin Payne farm is good for 2 bbls. a day in the Big Injun sand. In the same district, the

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FIVE NEW PRODUCERS IN SAGINAW; SIX TESTS NEARING BEREA SAND

By Whit

SAGINAW, Mich., Oct. 8.—Five new completions are reported from the Saginaw Field and at least six additional wells are almost ready to enter the Berea sand from whence the crude oil of the field is being produced. The field is getting more active from day to day and the real outer edges of the present producing field have not been found, as most the failures are quite a distance in advance of production. New drilling outfits are coming in daily. The most westerly producing well in the field, which is the Bliss Petroleum Co.'s No. 1, on the Fred Engle farm, SE cor. SW, Section 11, Saginaw Township, that was not pumped for a few days, started flowing and during the first 24 hours put 57 bbls. in tanks, making it show as good if not better than any well within the heart of the producing area. This well has been completed more than two months.

The second well of J. H. Shaltry and others, which is No. 1, on the Rinehardt lease, in Carrollton Township, brought in several days ago, but not put on the pump, has made two nice flows of oil. The second flow showed 52 bbls., which puts it in a class with the Engle well, which is easily 2 miles west of the Rinehardt.

The Bradshaw well of the Sun Oil Co., in Section 10, Saginaw Township, on the Bay Road, and the most northwesterly well in the field, has all the appearances of a good producer. Swabbing for a short period 20 bbls. of crude was taken from the well without lowering the fluid in the hole to much extent. This well got the Berea sand deep at 1,836 feet.

The Saginaw Prospecting Co. tapped the top of the Berea sand at 1,810 feet and drilled 19 feet in the sand where it was given an 80-quart shot. It shows for an excellent producer, being the second test by this company on the Waterworks Addition, in Carrollton Township. The well is reported to be good for 35 bbls.

The Wells-Schmidt Co.'s well, on the Whittaker Mill property, near Oak and Pine Streets, Carrollton Township, swabbed 35 bbls., which represents two days of accumulation of oil in the hole. Top of Berea was found at 1,805 feet and drilled 12 feet in the sand. Shot with 60 quarts.

The Saval Development Co.'s No. 1, on the Weiss property, near the northeast corner of Weiss and Hermansau Roads, found top of sand at 1,812½ feet and drilled 12 feet in and given a 40-quart shot, is estimated at 28 bbls.

The Superior Oil Co.'s second well on the Spatz property near Hermansau and Weiss Roads, struck the Berea sand at 1,810½ feet and drilled in 15 feet, where it struck a pay estimated at 20 bbls. or better.

The Fordney Petroleum Co.'s No. 1, on the Joseph Bisner property, near North Charlest Street on Weiss Street, is estimated at 20 bbls. Sand was topped at 1,817½ feet and drilled 16½ feet in the sand.

Seven Wells Due

There are at least seven wells within defined limits that should be brought in during the coming week. They are: Saval Development Co.'s No. 2 George Spats farm; Saginaw Prospecting Co.'s No. 1 Periard property; Barker Oil & Gas Co.'s No. 1 Phillips farm, Section 16, Saginaw Township; and the Sun Oil Co.'s No. 1

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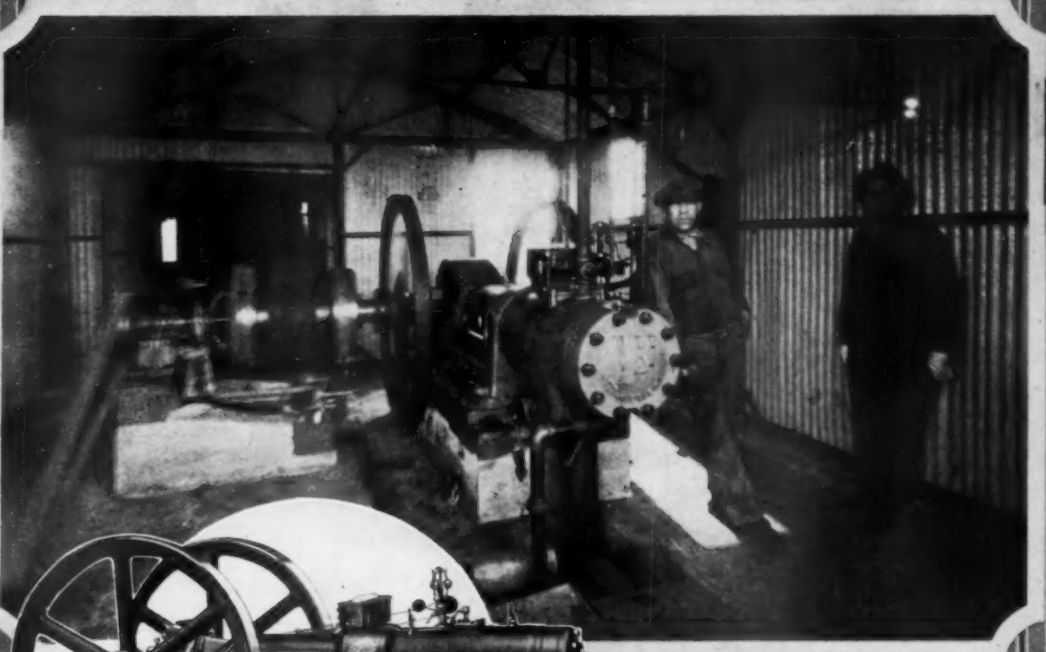

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Natural Gas Developments

Gas Industry Problems In California Differ From Other Sections

A study of certain gas making and fuel problems peculiar to the gas industry of California has been made by the Bureau of Mines, department of commerce, in co-operation with the California Gas Research Council.

Gas is produced in California by processes different from those common to other parts of the United States. The bulk of the manufactured gas is made in and distributed from the Los Angeles district and the San Francisco Bay district. The gas manufactured in the bay district is almost exclusively oil gas, whereas that produced in the southern part of the State, where natural gas is available, is mostly mixed natural gas and re-formed gas, but oil gas is the chief product when the supply of natural gas is inadequate. Practically all of the gas companies are equipped with oil gas generating apparatus, and anticipate using it in the future. As the continued use of the oil gas process to the exclusion of all other processes, depends upon a continued supply of oil at a low cost, questions have arisen as to what will be the future gas making processes and whether it will be necessary to make plans for the installation of different gas generating equipment.

The Los Angeles district has available large quantities of natural gas, which it is believed will supply the requirements for domestic demands for years to come. When the supply of natural gas fails to meet the demand, the situation in this district will probably be much the same as that now existing in the northern district. In other words, the gas companies in the northern part of the State must solve now some of the problems that will not confront the gas industry in the Los Angeles district for a number of years. Large volumes of gas are sold in the latter district for industrial use at a low rate. It is probable that an appreciable part of this business will be lost as the pressure of domestic demand is felt and the price of gas for industrial use rises above the cost of fuel from other sources.

Oil Gas Process

In the northern district, the oil gas process prevails because of the availability of cheap gas oil, and the lack of a readily available supply of high-grade solid fuel at a satisfactory low price. In the future the high-grade fuels available by importation from neighboring states or other sources may be on a competitive basis with oil for gas making, and the future development of the gas industry may be along different lines with solid fuel as the basic raw material. As to the possibility of obtaining a future supply of low-priced oil from present sources and from oil shale, the indications are that oil will be used for gas making for a number of years to come, but it is evident that oil from oil shale can not be supplied to northern California gas plants at a sufficiently low price to maintain the exclusive dominance of the oil gas process.

The Bureau of Mines recommends that in general, the following plan be followed in developing the gas industry of California to meet future conditions: Manufacture combined oil gas and carbureted water-gas, replacing the oil gas equipment by coal gas equipment as the price of oil advances, eventually making mixed coal gas and water gas, carbureting the latter to such an extent only as will be justified and determined by the relative prices of oil and coal and by the marketability of the coke. The seasonal peak load could be cared for by making oil gas, utilizing present oil gas generating equipment. In this manner the oil gas equipment need not be prematurely scrapped.

The coals of California are not well adapted for use in gas making processes now in common use. The coal beds are folded and faulted to a degree materially affecting mining and tending to cause high mining costs. Coal of good quality and suitable for the manufacture of either coal gas or water gas can be obtained from Australia, Utah, and probably from the eastern States at competitive prices.

Sulphur a Problem

Unless a cheap means is discovered for removing the sulphur from high sulphur crude oils or from gas oils, it will be necessary to use oils containing a high per cent of sulphur in the manufacture of gas in California. In order to use such oil successfully, it will be necessary to provide means for purifying the resulting gas, which will contain a troublesome amount of hydrogen sulphide and organic sulphur. Whether the present process of liquid purification can be adapted to purify this gas, or a modified method developed, must be determined by research. An appreciable amount of the oil available in California—some of which is not being won at present—is high sulphur oil. Also much of the oil shale of California will yield oil high in sulphur, judging from the limited work done in this field of endeavor. The solution of the purification problem will simultaneously make available for gas making purposes the highest grade coal found in California, namely the Monterey County coal, which contains too much sulphur for this use under present conditions.

Efficient operation of water gas sets using bituminous coal is dependent upon the use of clean, screened coal in the generator. The best results will naturally be obtained with a coal which is not friable and does not disintegrate upon being heated. An attempt should be made, through a scientific study of generator design and fuels, to develop a generator in which other fuels can be gasified with equal efficiency.

Anticipating the necessity or future desirability of using shale oil as a gas enriching material, small scale cracking experiments probably would give some useful information.

The possibilities of using petroleum carbon (pressure still coke), such as is produced in California to a certain extent, in the gas making process should be studied, and this study should be accompanied by laboratory experiments.

CARBON BLACK FIGHT RENEWED IN WASKOM

SHREVEPORT, La., Oct. 11.—Rumors that an injunction suit would be filed by the State of Texas in the United States Supreme Court to restrain the Owl Oil Co. from erecting a 12,000,000-foot capacity carbon black plant at Greenwood, La., were heard in Shreveport early in the week when the bitter fight to prevent the entrance of carbon manufacturers into the Waskom Gas Field was reopened.

Several months ago the Owl Oil Co. was granted a permit by Dr. V. K. Irion, head of the Louisiana Conservation Commission. A few weeks later protests from the north and south ends of Louisiana and from Texas were heard by the conservation commission. A public meeting was held in Shreveport at which resolutions were passed demanding the revocation of the permit. For several weeks Doctor Irion and the state administration were targets for numerous and caustic editorial attacks. Another hearing was promised but never materialized.

The Waskom Gas Field is on the west side of Louisiana and the east side of Texas. Gas for Shreveport, east Texas and Beaumont comes from that field. Operators there claim little of the gas is being used.

Doctor Irion was in Shreveport last week and issued a statement to the press charging Mayor L. E. Thomas of Shreveport had tied up the matter and Mayor Thomas made a sharp reply.

At the time Mayor Thomas said agitation for the injunction suit is being made by citizens of Marshall, Tex., and other cities along the gas line running to Marshall and Tyler. The mayor sees in the proposed injunction suit the only course left open to fight the execution of the permit since the city of Shreveport is without a legal process to carry on the fight.

INDUSTRIAL GAS USE SERVICE DEPARTMENT

FORT WORTH, Tex., Oct. 9.—Establishment of an industrial service department to serve Fort Worth industries is announced by the Fort Worth Gas Co.

Frank Jackson, who will head this department, has been equipped with instruments for taking samples of stack gas for analysis, for taking stack draft readings to determine velocity and other facts that bear upon wastage of fuel.

This is a service that is extended not only to present customers of the gas company but to future customers or to those who may be interested. According to gas officials, Jackson's services are available to plants of all descriptions and sizes, whether such concerns have engineers or not.

"We want industrial plant managers of Fort Worth to avail themselves of the services of Mr. Jackson," said Manager Frank Mason. "Not only will be make himself available to present and prospective customers of the company, but he will make visits to industrial plants throughout the city whether upon call or not, and tender his services free of all charge. It is the intention of the management of the company to make satisfied customers as well as to increase its present business. If we can satisfy our present customers we can rest easy as to the future business."

According to President O. K. Shannon, there is slight fear of any industrial tie-up for the coming winter. The Lone Star Gas Co., from which the local gas supply comes, has been adding new lines direct from the fields and at present there seems to be no limit as to future production.

TESTING GAS RANGES HEATERS AND TUBING

More than 580 gas ranges have been tested and approved by the Gas Appliance Testing Laboratory of the American Gas Association. Testing of space and water heaters and house-heating appliances is under way.

The laboratory was founded by the association to test all makes and varieties of gas-consuming devices. Stoves and tubing have already been submitted to a prolonged series of tests and the makers of appliances found to be satisfactory have been given the right to mark their products as approved by the association. R. M. Conner, director of the laboratory, has appealed to the public to make the work a success by insisting that the gas appliances they buy bear the association's seal of approval.

Co-operation by gas companies has made possible the marketing of officially approved devices. In New York City, Newark and Baltimore ordinances restrict the sale of unapproved gas appliances. In Baltimore only appliances approved by the laboratory can be sold and in New York gas tubing must conform to the same specifications prescribed by the laboratory.

ANNUAL CONVENTION OF GAS ASSOCIATION

A record attendance is reported at the annual convention of the American Gas Association in Atlantic City, N. J., October 11 to 15. More than 250 exhibits of gas appliances are on view, compared with 208 last year.

A feature of this year's exhibit is the first showing of the seal of the Appliance Testing Laboratory. This organization was formed by the association to test stoves, lamps, irons, tubing and all other appliances used in the burning of gas. Appliances which meet the applied tests may be sold bearing the laboratory's official seal of approval. Samples of appliances tested and approved by the laboratory are on exhibition at the convention.

About 5,000 officials of gas companies were expected to attend the convention. Among the speakers were H. C. Abell, president of the American Gas Association; Dean Ralph E. Heilman of the school of commerce at Northwestern University; Philip Cabot of the Harvard Graduate School of Business Administration, and C. K. Burgess, director of the Bureau of Standards.

CARBON BLACK MAKERS PROTEST GAS QUOTA

SHREVEPORT, La., Oct. 11.—Protesting that the recent reduction in the quota of gas to be burned in the Monroe Field in carbon black plants was unreasonable, carbon operators there laid their complaints before Dr. V. K. Irion, head of the Louisiana Conservation Commission at Monroe last week. The quota was recently cut down from 275,000,000 feet daily to 244,000,000 feet and another reduction is to be made in March, 1927. The carbon manufacturers contended the cut was unreasonable.

Doctor Irion declared after the meeting that the carbon black makers in Monroe will submit to the new quota or a special session of the legislature will be called.

Operators in that field have decided to send a committee to Baton Rouge between October 15 and 20 to lay their complaint before Governor Fuqua.

LARGER USES OF GAS NEED SCIENTIFIC RATE

The extension of gas into the industrial and commercial field and its increased use for house heating, refrigeration, metal melting and other purposes, makes scientific rates of paramount importance, according to utility men. They contend that the old "flat" rate for gas worked well when gas was used exclusively for lighting and that revision of rates is necessary if the use of gas is to be diversified on a large scale.

In the administration and enforcement of rates, regulatory bodies should have a free hand, it is contended. They argue that such bodies are composed of experts whose opinions should not be overruled by legislatures.

George B. Cortelyou, president of the Consolidated Gas Co. of New York, is among the public utility officials who have spoken in favor of a more scientific attitude toward gas rates.

"Before gas can reach the point of fullest utilization, it must be freed of certain legislative restrictions that still hamper it in some places," said Mr. Cortelyou. "The 'flat' rate should be eliminated and gas companies, under proper supervision of public authority—that is, the public service commission—should be permitted to adopt rate schedules that are sufficiently flexible to allow an equitable allocation of charges among the several classes of customers."

MEN KNOWN IN OILDOM

Edwin Higgins

Edwin Higgins, secretary of the Chamber of Mines and Oil, Los Angeles, Calif., since March, 1925, has established an enviable record during that time. In the past year, branches have been established in several parts of the State contiguous to the various producing areas.

The regular monthly luncheons of the chamber have become very popular due in a large measure to the work of the Wildcats, organized last year under the direction of Mr. Higgins. In addition to increasing the activities and usefulness of the chamber, Mr. Higgins through his tireless efforts has more than doubled the membership during the past 12 months.

Mr. Higgins was born at Jacksonville, Fla., April 14, 1877, and although he has been closely identified with the mining industry for the past 20 years he has spent a considerable part of this time in the oil business. He graduated as a mining engineer in 1902, and later received his Master of Science degree at Lehigh University. In 1905, he moved to Butte, Mont., where he became manager of a mine and later organized the Mines Exploration Company. Mr. Higgins was assistant editor of the Engineering and Mining Journal in 1908-9, and was a mining engineer with the United States Bureau of Mines. He was also efficiency engineer with the California Metal Producers Association, staff engineer of the Metals Exploration Company, and president of the California Metal and Mineral Producers Association.

PERSONAL PARAGRAPHS

Frank Barnes, well-known Tulsa operator, was a recent Fort Worth, Tex., visitor.

* * *

Fred Beresford of Calgary, Alta., is returning west after a visit at Petrolia, Ont.

* * *

Harlan Read, oil producer of Okmulgee, Okla., is recuperating from a minor operation.

* * *

W. R. White, who has been spending his furlough at Inwood, Ont., has left for Talara, Peru.

* * *

H. H. Carson, of the Ajax Iron Works, of Corry, Pa., was a Tulsa, Okla., visitor last week.

* * *

Walter A. Davison, of the Carter Oil Company legal department, is spending his vacation at his former home in Lima, Ohio.

* * *

W. W. Zingery of the Zingery Map Company, has moved his headquarters to Abilene, Tex., from Fort Worth, in order to be nearer the scene of operations.

Meryl Middaugh, of the Hurley Gasoline Company of Tulsa, Okla., has established offices at Abilene, Tex., for that concern.

* * *

Charles D. Clarke, of the Charles R. Long, Jr., Company, Louisville, Ky., was in Shreveport, La., last week on company business.

* * *

Fred Webb, who has been field manager for an oil company in Ecuador for the past 15 months, is spending a holiday in Petrolia, Ont.

* * *

E. H. Moore, president of the Independent Oil & Gas Company, has returned from a trip of inspection over his company's Texas properties.

* * *

C. W. Bardeen, of the B. & B. Pipe Shops at Signal Hill, Calif., has been seriously ill during the past week or 10 days but is again up and around.

* * *

J. M. Hayner of Tulsa and J. G. Reeves of San Antonio, Tex., members of the firm of Hayner, Reeves & Company, were in Fort Worth, Tex., recently.

* * *

Roderick Burnham, manager of lands for the Union Oil Company, is on his way to New York on company business to be gone about three or four weeks.

* * *

L. K. Sherman, representing the McCord Radiator & Manufacturing Company, of Detroit, Mich., spent some time calling on the Mid-Continent trade recently.

* * *

W. G. Swaney, general manager of the Kerotest Manufacturing Company, Pittsburgh, Pa., spent several days in Shreveport, La., last week in the interest of his firm.

* * *

D. S. Stapleton, for the past three years in the Fort Worth, Tex., office of L. E. Cahill & Company, has been made manager of that company's new Amarillo, Tex., office.

* * *

Robert H. Wood, geologist of the firm of Wood & Wood, Tulsa, Okla., was in Fort Worth, Tex., last week on his way to Amarillo, Tex., where he is interested in a drilling well.

* * *

Floyd K. Johnson, vice president of the Mahlstedt Oil Company of Fort Worth, Tex., returned last week from a honeymoon trip to Colorado with his bride, formerly Miss Thelma Bates.

* * *

Dow Dunaway, in charge of the Magnolia land and leasing office at Laredo, Tex., has been transferred to Oklahoma, and P. E. Haralson of Duncan, Okla., is in charge of the Laredo office.

* * *

J. A. Johnson, of Johnson & Ashe, independent operators who opened the Gypsy Pool near Wewoka, Okla., was in Fort Worth, Tex., last week in connection with opening offices in the F. & M. Building.

* * *

E. J. Atkison, vice president in charge of production for the Southwestern Engineering Corporation of Los Angeles, Calif., is in Tulsa, Okla., where the company maintains a branch office and factory.

* * *

John Lovejoy, vice president and general manager, and Allman M. Blow, head of the land department of the Amerada Petroleum Corporation, of Tulsa, Okla., visited their Fort Worth, Tex., office last week.

* * *

Ivan Racheff has been appointed metallurgical engineer of the Racine Radiator Company, Racine, Wis. He is in charge of research work with respect to power units, industrial and heavy duty type radiator manufacturing.

* * *

M. H. Overlees, independent operator of Shackelford County, north Texas, has moved his headquarters from Albany to Stamford, in northern Jones County, temporarily. He was in Fort Worth, Tex., and Tulsa, Okla., on business last week.

* * *

Mr. and Mrs. G. H. Leahy, of Adelaide, South Australia, visited Petrolia, Ont., recently. Mr. Leahy went to Australia many years ago as a driller, working with William Bedal of Copleston, on a test started at Risbon, Australia, by W. O. Gillespie. He is now managing director of three large hotels in South Australia.

Early Deane has moved his family from California to San Antonio, Tex., and will make that his home. His son has entered West Texas Military Academy in San Antonio.

* * *

A. B. Macbeth, executive vice president of the Southern California Gas & Mining companies, left Los Angeles early this week to attend the eighth annual convention of the American Gas Association to be held at Atlantic City, N. J., October 11.

* * *

Mr. and Mrs. C. L. Emmons, of Kalispell, Mont., are visiting Mr. and Mrs. Ralph Arnold at the latter's home in Pasadena, Calif., previous to Mr. Emmons' departure to look over some Mexican land. Mr. Emmons is manager of the Kalispell Kevin Oil Syndicate.

* * *

S. G. Gassaway, who for the past three years has been assistant manager of the commercial department of the Oklahoma Gas & Electric Company of Oklahoma City, has resigned to become general manager of the Petroleum Rectifying Company of Los Angeles, Calif.

* * *

H. P. Ferree, of the Continental Oil Company, with headquarters at Denver, Colo., was a Casper, Wyo., visitor over the week-end on business for his firm. Mr. Ferree was formerly in charge of the Ohio Oil Company's clerical department in Casper before going to the Continental Oil Company.

* * *

H. R. Gallagher, vice president of the Shell Company of California, has just returned to his office in San Francisco, following a pleasure trip back to the old home town of Toronto, Canada. Mr. Gallagher also visited a number of eastern cities before returning.

* * *

J. W. McCulloch, president of the McCulloch Oil Company of Okmulgee, Okla., who is drilling two wells in Winkler County, west Texas, one located south of the Westbrook well and the other in the north part of the county near the New Mexico line, was a recent Fort Worth, Tex., visitor.

* * *

Robert Jordan has returned to Los Angeles, Calif., after a year or so spent in the Kevin Sunburst Field in northern Montana, where he did considerable geological, engineering and correlation work. He began his oil production work in the Spindletop Field in Texas, later going into the Oklahoma and Texas fields before coming to California.

* * *

Mr. Goodale, of the Columbia Shale Oil Company, of Colorado, accompanied by Messrs. Conacher and Brown of Scottish Oils, Ltd., authorities on shales, as consulting engineers, is in New York inspecting the plant of the American Hydrocarbon Company, Inc., preparatory to his company's adopting the American Hydrocarbon Company lead jacketed low-temperature process for the treatment of shale.

* * *

R. D. Montgomery, who has been connected with the Standard Oil Company of California for the past eight years, has resigned his position as assistant manager of the land and lease department with that company and is connected with the Richfield Oil Company of California as manager of the land and lease department, with headquarters in the Bartlett Building, Los Angeles, Calif.

* * *

R. S. Ellison, vice president and manager of field operations for the Midwest Refining Company, returned to Casper, Wyo., after a tour through the middle and southern states of the Rocky Mountain group. In company with other officials, Mr. Ellison visited the outlying fields and operations of the Midwest Company and swung through the Utah and New Mexico operations to the Panhandle, then into Kansas and back into Colorado and Wyoming.

* * *

Among the oil men from Shreveport, La., attending the World Series baseball games last week were R. T. Lewis and P. P. Stagg, Gulf Refining Company; E. D. Holcomb, Magnolia Petroleum Company; J. L. Shea, The Texas Company; M. E. Waldron, Louisiana Oil Refining Corporation; J. H. Mann, Imperial Oil & Gas Products Company; B. M. Nowery, Palmer Corporation; G. O. Dunmire, general manager of the Parkersburg Rig & Reel Company in the Shreveport territory; and W. M. Redditt, head of The Texas Company's land department in the Shreveport territory.

Every
HUGHES TOOL JOINT
Must Pass Two Separate
Inspections for
Thread Fit

HUGHES TOOL COMPANY

Branch Plants
Los Angeles, Calif.
Oklahoma City, Okla.

MAIN OFFICE AND PLANT
HOUSTON, TEXAS

Export Office
New York City, N.Y.

COOPER

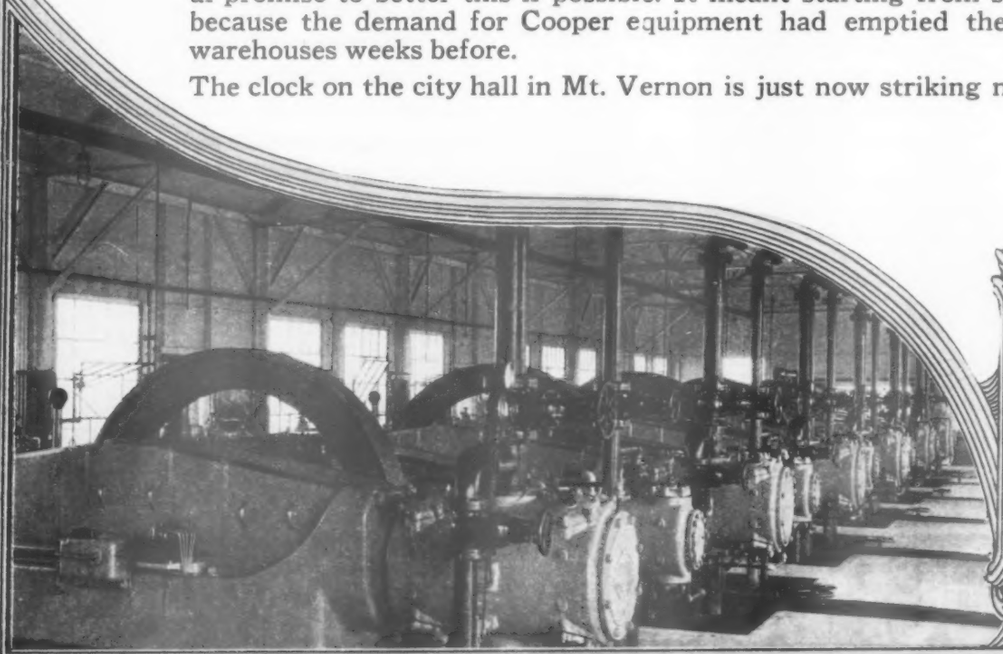
The Boys in Overalls

Two weeks ago the production department of a big oil company decided to build what will be the largest air lift plant in the country. Every day's delay meant thousands of dollars to them in lost production. Hence, they determined to have the plant operating within forty-five days.

Then came the problem of where to get the equipment. Some of their individuals favored Cooper compressors because they had found them so satisfactory in their gasoline department. Others not having had first hand experience with Coopers, favored other makes. But someone remembered that during all their experience with the Cooper Company they had never been disappointed on delivery. In this case, where meeting a delivery promise was so important, experience prompted them to rely again upon Coopers.

Ten 170 horse power engines were promised complete in fifteen working days and the compressor cylinders a week later, with an additional promise to better this if possible. It meant starting from scratch, because the demand for Cooper equipment had emptied the stock warehouses weeks before.

The clock on the city hall in Mt. Vernon is just now striking nine on



Sinclair's latest plants have been built with Cooper engines. Photograph shows the compressor end of six Cooper Type 80's in their new gasoline plant near Madison, Kansas.

ENGINES

Push Over and Score

the evening of the fourteenth day and a group of tired men are loading the tenth and last engine on cars. Another group is testing the last high pressure compressors to 1200 pounds. They, too, will be loaded tomorrow if no defects are found.

Berger Larsen, the plant superintendent, breezed in a few minutes ago, happier than we have seen him for days. "By gad" (only he didn't say "gad"), "I didn't think they could do it, but they're spiking the last engine on the car now."

Again every man in the Cooper plant has given his very best to make good an unusual delivery promise. It is the same team spirit which the old timers tell us has always existed here, ever since Charley Cooper started to make plow shares ninety-three years ago. You would sort of expect a better gas engine from a gang like that, wouldn't you? Anyway, it partly explains why companies using "Coopers" seldom, if ever, change.

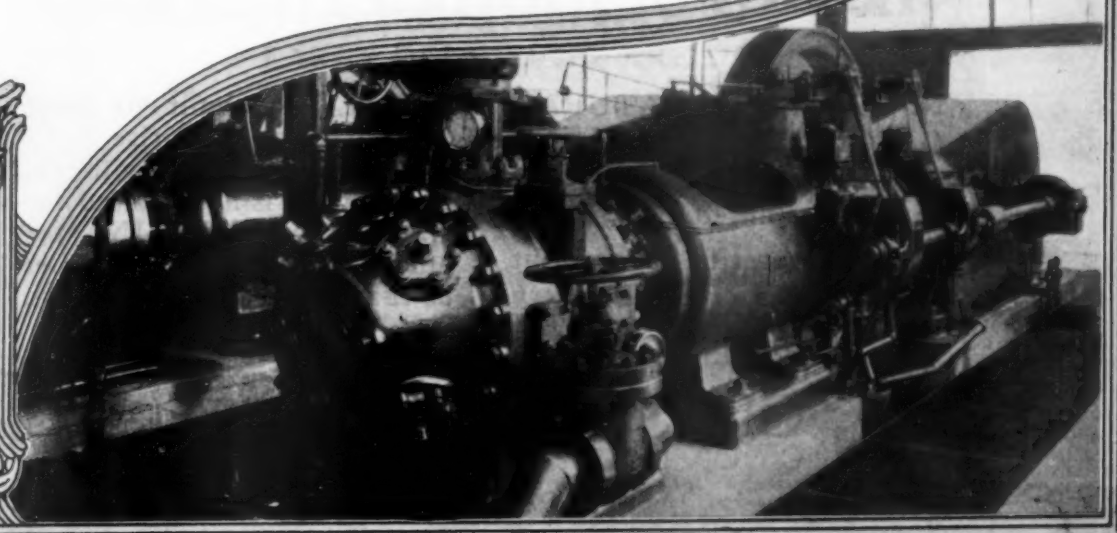
THE C. & G. COOPER COMPANY

HOME OFFICE, MT. VERNON, OHIO

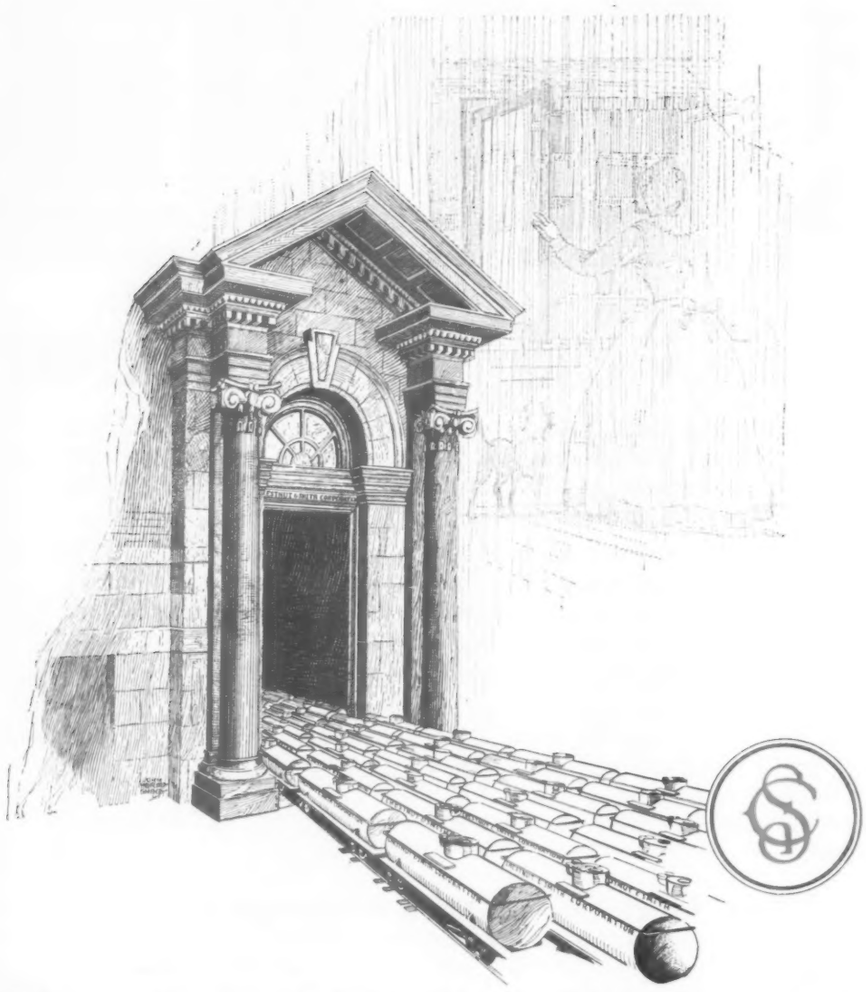
1605 Kirby Bldg., Dallas, Texas

Bank of Italy Bldg., Los Angeles, Calif.

504 Kennedy Bldg., Tulsa, Okla.



The Cooper Type 19 twin cylinder, 200 B.H.P., double-acting engine driving back connected compressors in South Penn Oil Co.'s Yawkey, W. Va., compressor station.



Shades of Mother Hubbard

No one in need of NATURAL GASOLINE ever came to this organization for a supply and was disappointed.

Years of operation have taught us the needs of the Industry and we have built to meet these needs as they arise.

The Winter months will create an increasing demand for NATURAL GASOLINE for quick starting motor fuel. *Let us furnish your requirements.*

CHESTNUT & SMITH
CORPORATION
Tulsa, Oklahoma

Chestnut & Smith Building, Seventh and Cheyenne

EQUIPMENT AND SUPPLIES

SOUTH AMERICAN SALES OF EQUIPMENT ARE GOOD

The Newton Process absorption gasoline equipment and plants have enjoyed considerable sale in South America during the past 12 months, and the increased export business necessitated the personal supervision of Dan L. Newton, president of the Newton Process Manufacturing Co., of several installations of complete plants and additional units in plants requiring additional equipment to take care of increased production. Mr. Newton reports considerable activity in the oil and gas fields of South America. Newton equipment is made at Fullerton, Calif., in its lately erected modern plant, and is distributed by Hurley Brothers of Tulsa, Okla., and the National Supply Co. of Toledo, Ohio.

REMOVES PARAFFIN

During cold weather paraffin deposits in lead lines from oil wells to storage tanks are a frequent source of annoyance to operators handling paraffin-base crudes. The Linde Air Products Co. announces that an effective method for removing these paraffin deposits has been developed recently by an oil company in the Southwest. "Some calcium carbide (in lumps of the size known as quarter) and a little water are fed into the line," says the announcement. "The carbide and water react, generating heat enough to melt the paraffin, which is then picked up by the oil and carried on through the line. Heavy deposits of paraffin in lines a quarter of a mile long have been successfully removed by this new method."

NOW MANAGER OF SALES

John R. Blair has been appointed manager of sales of Pittsburgh Steel Products Co., Pittsburgh, Pa., succeeding Charles F. Palmer, who resigned. Mr. Blair was educated in the common schools in Scotland, and was with the Millom & Askam Hematite Iron Co., in the northwest of England, from 1895 to 1902. He

John R. Blair

came to Pittsburgh in 1902, and was in the purchasing department of the Pressed Steel Car Co. from that time until 1907.

For the past 18 years Mr. Blair has been connected with the sales department of the Pittsburgh Steel Products Co., and its predecessor, the Seamless Tube Co. of America, and for several years has been acting as assistant to the general manager of sales.

TRADE LITERATURE RECEIVED

From the Halliburton Oil Well Cementing Co. of Duncan, Okla., a folder describing an improved device for measuring depth of oil wells.

From the Power Engineering Co., New York City, a booklet entitled "Heat Engineering."

From the Hills-McCanna Co., a folder entitled "Positive Lubrication."

From the Bristol Co., Waterbury, Conn., a catalog describing the Bristol recording voltmeters.

From the Northrup Equipment Co., Parkersburg, W. Va., a catalog and price list on Neco pumping equipment.

From the Celite Products Co., Los Angeles, Calif., a booklet entitled "High Temperature Insulation." This is a printed copy of a lecture on the subject which has been used by many universities in their mechanical engineering courses.

From the Sullivan Machinery Co. of Chicago, bulletin 83-E describing Sullivan portable air compressors operated by electric motors.

From Schutte & Koerting Co., Philadelphia, two folders, the first describing herringbone gear pumps and the second steam jet siphons for lifting liquids.

MADE SALES MANAGER

Announcement is made of the appointment of D. A. Cleveland as sales manager to handle California sale for the Regan Sales Co. Mr. Cleveland is well known in the California fields, having been associated with several well-known oil equipment companies, and he has a host of friends on the Pacific Coast.

CATALOG OF PLUG VALVES

Recognizing the increased demand in the petroleum field for plug valves, the Merco-Nordstrom Valve Co. has prepared an interesting catalog illustrating approximately a score of plug type valves that are adaptable for use in the oil fields for practically every service where valves are required. The booklet explains the manner in which hard grease can be inserted into plug valves under pressure to maintain a tight seal regardless of the type of fluid or gas passing through the valve and regardless of the temperature. Copies of the catalog are ready for distribution, and those interested in valve construction may obtain a copy by writing to the manufacturers at 121 Second Street, San Francisco, or to any of its branch offices.

MADE GENERAL MANAGER

R. C. Brower has recently been appointed as general manager of the Timken Roller Bearing Service & Sales Co., which maintains 25 direct factory branches and several hundred authorized distributors. Mr. Brower will make his headquarters in Canton, Ohio, at the main plant of the Timken Roller Bearing Co., but will devote a great deal of his time to maintaining contact in the field. He is well known in the bearing industry, having been associated with it since 1913; and for the past four years with the Timken company, in both the automotive and industrial sales divisions. Prior to that he was for many years eastern and central district manager of the Bearing Service Co., which was absorbed when the Timken Roller Bearing Service & Sales Co. was organized.

"PROVING GROUND" FOR O. C. S.

The O. C. S. Manufacturing Co. of Coffeyville, Kans., has recently erected a derrick, with a standard rig, on part of the property occupied by its manufacturing plant. The rig will be equipped with O. C. S. products and a hole will be drilled on this property, not for the production of oil, but for the purpose of intensive testing and careful observation of the O. C. S. products.

OPENS TULSA OFFICE

Symonds & Henson Rig Co. has opened an office in the Alexander Building, Tulsa, Okla. This firm was formerly located at Bristow, Okla. The Tulsa office will be in charge of W. S. Symonds.

ELECTRICAL INSTALLATION

The Standard Oil Co. (Indiana) has purchased three Hild differential electric drive rotary drilling outfits from the Oil Well Supply Co., Los Angeles, for use in Wyoming. C. Hern, son of J. J. Hern, superintendent for the Chanslor-Canfield Midway Oil Co., Los Angeles, is in charge of the installation of the new equipment.

The C. C. M. O. Co. has drilled seven Torrance wells with the same equipment and is using another in Ventura County. The Shell Co. is also using a Hild drive in Ventura County and the Denver and Wyoming interests drilling in Colusa County, California, bought one after losing two holes with other equipment. The Gulf Production Co. is using a Hild drive in southeast Texas and two complete outfits have been shipped to Russia for the Asneft Oil Trust, the soviet government organization that controls all Russian oil field development.

WELL ELEVATION SERVICE

A service to supply well elevations is now established with headquarters at 326 Atco Building, Tulsa, Okla. L. D. Simmons, formerly with the Carter Oil Co., and R. W. Laughlin, formerly of the Tidal Oil Co., have formed partnership and established a service long needed among the oil companies playing geology. They have realized the economic loss of each company's determining its elevations when a service could take care of it at much lower cost. They also realize the utter necessity of accurate work and have gone ahead with this in mind.

WATTS-MILLER LINE CATALOGED

The Miller Improved Gas Engine Co. has issued a beautifully printed and illustrated catalog giving details in description and in picture of the Watts-Miller line of single and twin-cylinder, four-cycle, slow-speed, heavy-duty gas engines and its gas and air compressor units. Every important part of the machinery is pictured and a detailed description of its features is given. It is an interesting publication as well as a fine specimen of the printer's and engraver's art. The catalog may be had by writing the home office at Springfield, Ohio.

BUYS 60 TANK CARS

The Cities Service Tank Line Co. has just purchased 60 insulated tank cars (capacity 8,000 gallons each), which will be used by the Empire Gasoline Co. for transporting casinghead gasoline. The new cars are equipped with copper bearing steel tanks, one of several special features. The American Car & Foundry Co. is building 30 of the cars and the General American Tank Car Co. the other 30.

ENDS WESTERN TRIP

Walter Davis, Tulsa representative of the Detroit Graphite Co., has just returned from a month's trip through the West, where much of his time was spent in supervising the application of paint sold to some of the leading oil companies.

LOCATED IN BALTIMORE

Gilbert H. Unruh, of Link-Belt Co. of Philadelphia, Chicago and Indianapolis, is now permanently located as his company's representative in Baltimore. Mr. Unruh, for the present, may be reached at 618 Regester Avenue, Stoneleigh, Baltimore County, Maryland (Govans P. O.).

DAVIDSON TORPEDO CO.

W. F. Davidson, of Okmulgee, Okla., better known to the oil men as "Red," has started the Davidson Torpedo Co. He was connected with the Barton Torpedo Co. as shooter for 11 years.

DEMAND FOR PIPE STILL ACTIVE; EARLY DELIVERIES ARE DESIRED

By B. E. V. Luty

PITTSBURGH, Pa., Oct. 11.—The end of the season rush seems to be occurring in buying and specifying of oil country tubular goods at the pipe mills. All the business placed involves as early deliveries as the mills can make and the result is that there is not much catching up in deliveries. On some sizes, those less in request, mills can make considerably earlier shipments than a month ago, but in various sizes their delivery promises generally run four to five weeks. There is quite a shortening in actual deliveries, however, as compared with conditions two and three months ago, for then many deliveries were later than the promises.

Apparently the pipe mills do not expect the heavy buying and specifying to last much longer, but there is no definite evidence, the expectation being based chiefly upon experience. As a matter of fact there is so much consumption in portions of the country where the weather is never very adverse that there may be less decrease in demand in the next three months than has usually occurred in the period.

On the whole, demand for merchant pipe has been tapering off somewhat for several weeks, but it is still fairly active, there being no large decrease.

Negotiating Quietly

Very little is heard about line pipe in the current trade talk, but it is surmised that there is a good bit of negotiating quietly. Prospective buyers realize that the mills are in strong position, when so well sold up, and are naturally indisposed to disturb the market by sending inquiries broadcast.

While some estimates are that the total volume of steel business since September 1 has been just about equal to that in August, there are some indications that there has been an increase, apart from the seasonal buying of rails, which is a sort of extra.

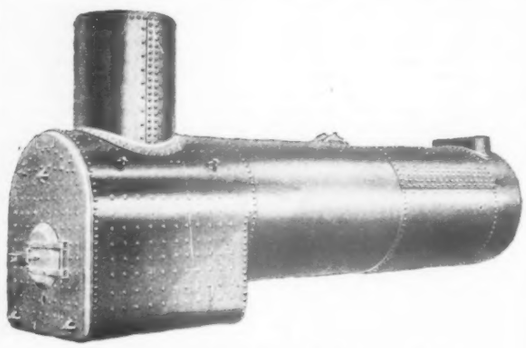
Actual production of steel changed but little from August to September, August having brought a 10 per cent recovery from July, the low month of the year. Production since the first of this month has been heavy, and altogether it seems that the average rate since September 1 has been somewhat above the rate during August. The trade takes a conserva-

(Continued on Page 109)

DONOVAN BOILERS ARE CONSISTENTLY GOOD

CHOSEN BY MEN WHO KNOW BOILERS

THE PRODUCT OF LONG EXPERIENCE



Donovan—A.S.M.E. Code—Oil Country Boiler

In 1890, the DONOVAN BOILER WORKS had about 900 sq. ft. of floor space. Now it has 50,000 sq. ft.

The first DONOVAN boiler was 25 H.P., 100 lbs. W.P., non-code. Now they are made from 25 to 165 H. P., 150-lb. to 175-lb. W.P., A. S. M. E. Code.

The first plant was equipped only with hand tools. The present plant has the most modern and up-to-date machines and methods.

The first DONOVANS were used only in the United States. Now they are known and used in all the world's oil fields.

DONOVAN BOILER WORKS has always specialized in oil country boilers. It has carefully studied the needs of the oil industry and has built to meet these requirements.

The DONOVAN boiler is backed by a long record of practical experience. It is designed not only to conform to the A. S. M. E. Code but also to meet the exacting requirements of oil field use. It is the result of careful study, modern design and construction, workmanship of the best, and pride in the product.

You cannot do better than to buy a DONOVAN whenever you need a boiler. It is a thorobred.

Manufactured by
DONOVAN BOILER WORKS, Inc.
Parkersburg, W. Va.
NEW YORK OFFICE
30 Church Street
FRICK-REID SUPPLY COMPANY
Mid-Continent Distributors
GREAT NORTHERN TOOL & SUPPLY CO.
MIDLAND IRON WORKS
Montana Distributors
All Leading Supply Houses Throughout the Eastern Fields handle
DONOVAN QUALITY PRODUCTS
They will do your work

EIGHTEEN DRY HOLES, THEN OIL; COST OVER TWO MILLION DOLLARS

Much has been said in the past about the hazard and uncertainty of finding oil. The oil industry is interested in having the public know these facts because it so often encounters a public impression that finding oil is no trick at all—that about all there is to it is to pick out a likely-looking spot, drill a hole in the ground and stand by while the earth sends up a flood of liquid gold, and then to count the enormous profits. And it is true that the public at large is unaware of the financial risks involved in trying to find new supplies of petroleum. This is not to be wondered at, says the Standard Oil (Calif.) Bulletin. The public hears of the successes in oil—not the failures.

The oil companies of the United States spend millions upon millions every year, at home and abroad, in unsuccessful search for oil. Some day someone may find a method of detecting the presence of oil beneath the surface without drilling a hole some thousands of feet deep; but that day is not yet, although the scientists are working on the problem. If that day does come, wildcatting will be a more simple and less expensive thing. As it is, when there is reason to think there may be oil at a certain place the only way of finding out is by the drill. Far more frequently than not the drill fails to find oil. And it costs as much to drill a dry hole as it does a producer. We are now discussing purely wildcat wells, drilled to find new fields.

Even after a field is discovered, there is still considerable uncertainty regarding the extent of production until sufficient wells have been drilled to outline the limits of the field. It seems an amazing thing that very often wells are found to be dry, even though drilled within a few hundred feet of profitable production.

There are certain surface formations of the earth which indicate the possibility of oil below, though with no certainty. On the other hand, structures favorable for the presence of oil may have been covered with earth in ages gone by and concealed. Sometimes a new oil field is discovered through the drilling of a single hole. At other times numerous wells are drilled in a vicinity before oil is found.

The recent discovery in southern California of what is called the Seal Beach Field concludes an interesting quest, and illustrates the hazard and uncertainty of finding oil. For some years the geologists have considered the area around Seal Beach as favorable. Seal Beach is on the seacoast southeast of Long Beach, and some 3 miles from the famous Signal Hill oil field. In 1921, a well was drilled in the vicinity of Seal Beach and abandoned—a dry hole. Each year since then other holes were drilled, to the total of 18, and all failures. This year the Marland Oil Co. drilled to a depth of 4,427 feet and found oil—a fine well which proves what had so long been suspected, that there is oil in the Seal Beach area. But it took a great deal of drilling and a vast expenditure of money to prove it.

Altogether various companies drilled 85,000 feet within 2½ miles of the discovery well, roughly 16 miles of hole. One unsuccessful company made nearly 30,000 feet, another 17,000 feet, and another 12,000 feet. The successful company drilled one hole to 5,400 feet and failed. It tried another and found oil at 4,400 feet. Thus the winner in the race drilled less than 10,000 feet, against a great deal more by each of several companies, which shows again the uncertainty of the game.

One of the dry holes at Seal Beach was only 800 feet from the discovery well, another only 1,900 feet. These missed good fortune by a very narrow margin. Of the total of 18 dry holes, all except one are within 1½ miles of the producer.

California's latest oil field was discovered only after a great deal of wildcatting covering a period of several years. The chart shows the discovery well and 18 dry holes, all within an area of less than 2½ miles from the successful well.

There are no figures as to the actual cost of all this drilling, but figured at $20 per foot, which is quite conservative, the total expenditure runs to $1,700,000—and it was probably a good deal more. Add to this the cost of obtaining and holding leases, geological work, and other expenses, and the cost rises to certainly well over $2,000,000, and perhaps to $2,500,000.

The history of what has happened at Sear Beach in the last five years is a very good example of the difficulty of finding oil, even in places where conditions are very favorable to its presence.

POLISH PETROLEUM EXPORTS

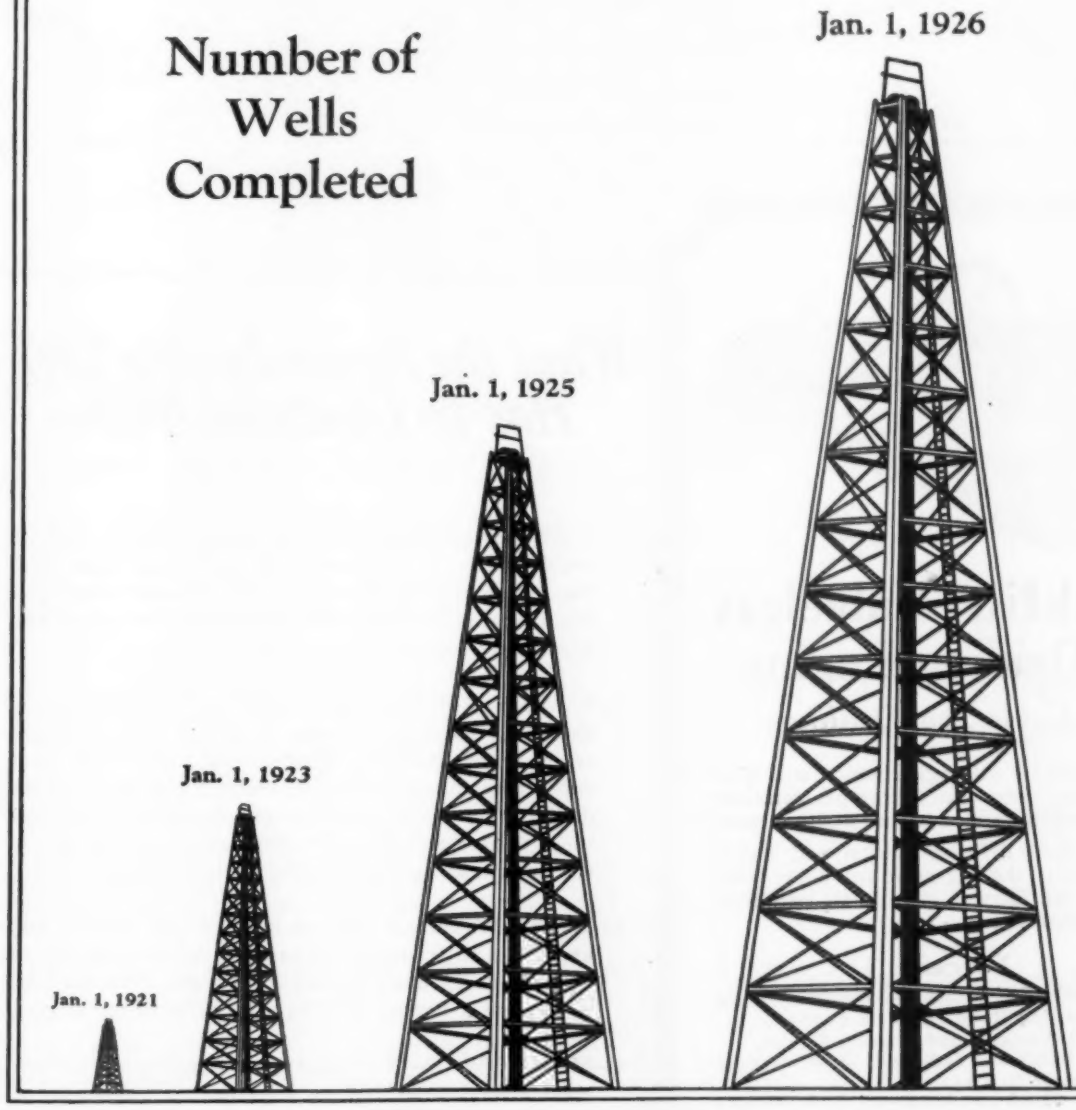
Exports of petroleum products from Poland in the first half of 1926 showed an increase of more than 25 per cent over those of the corresponding months in 1925, in spite of the loss of the German market, the United States Department of Commerce states. They amounted to 213,675 metric tons, compared with 170,984 tons.

Growth of Business

HALLIBURTON OIL WELL CEMENTING CO.

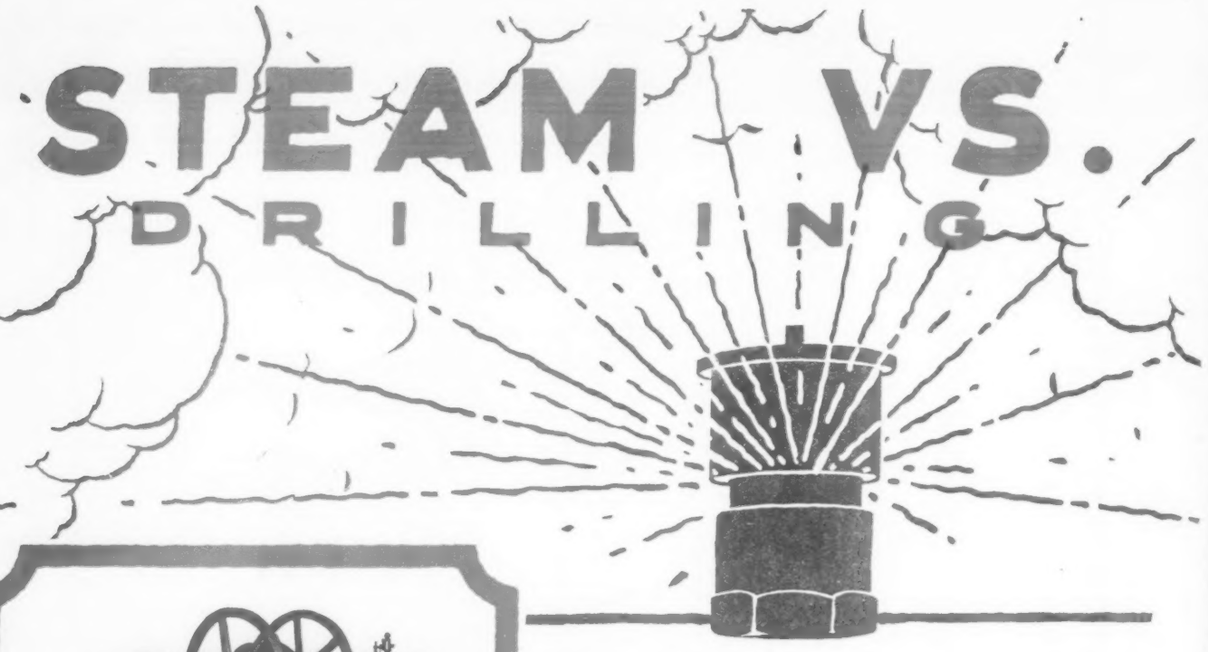
Duncan, Oklahoma

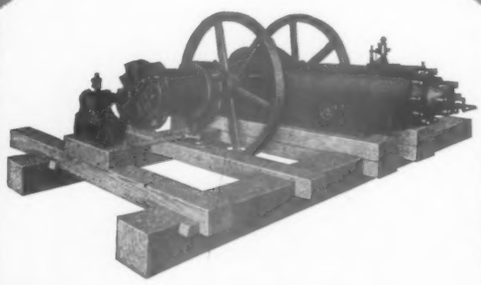
Number of Wells Completed



1923 Cementings were 78% greater than 1922
1925 " " 92% " " 1923
1926 " " 45% " " 1925

STEAM VS. DRILLING





Franklin Valveless Oil Drilling Engine

For Cable Tool Drilling

A single cylinder oil engine which will give minimum operating cost, better performance under all conditions, and reduce drilling time.

Gives a perfect drilling motion and eliminates "fighting" the engine at any point from top hole to oil. Easy to start in all weathers. Visible lubrication.

Prices

Complete with Self-Oiling Reversible Drilling Clutch, Circulating Pump and Fuel Tank.

Sizes for Mid-Continent and Western Service, $3,350 and $3,700—F. O. B. Factory

Sizes for Eastern Service, $2,600 and $3,350—F. O. B. Factory

What the Steam Engine User Has to Contend With~

1—TONNAGE—Weight of the Steam Engine and its boiler makes its transportation costs very high, from the standpoint of handling and cartage. Moving a steam engine from one well to another is a serious and expensive problem.

2—WATER—Not only the amount and cost of hauling the great quantity of water necessary to operate the steam engine, but the effect of the notoriously poor water available in the oil fields is a big problem the driller must contend with. It is not unusual for boiler tubes to give out after very few days of service due to the deteriorating effect of the water available.

3—FUEL—Wood and coal are hard to get, difficult and expensive to transport. When gas is used, laying of lines alone in many instances is more than the cost to operate a Franklin Valveless Oil Drilling Engine.

4—MAN POWER—A steam engine requires almost constant attention so that its selection adds not only to the costs of transportation, water and fuel, but to the pay roll.

THE WONDER ENGINE FOR DRILLING

FRANKLIN VALVE

THEY BEAT STEAM

OIL AND GAS ENGINES

What the FRANKLIN VALVELESS Owner has in His Favor

1—LIGHT WEIGHT—A complete Franklin engine can be carried to the job on one truck. Moving from well to well is a simple problem.

2—WATER—Records show that 100 barrels of water are sufficient to drill a thousand feet of hole.

3—FUEL—Whether using the Franklin Valveless Oil Drilling Engine or the Franklin Valveless Gas Drilling Engine, you will find the cost of operation astoundingly less than steam.

4—OPERATION—The Franklin Valveless Engine will do all that a steam engine will and at a fraction of the cost to operate. Unlike many oil or gas engines the Franklin is designed for flexibility and smoothness of operation. It has the power and uses it. No change of fuel conditions in shifting location will bother the Franklin owner because a Franklin Type AO Oil Engine can be converted from oil to gas in two hours time.

Franklin Valveless Engine Co.

FRANKLIN, PA.

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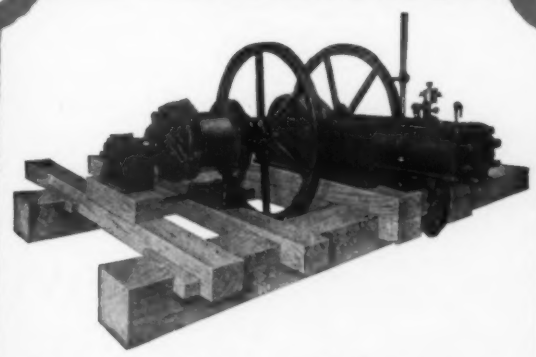

Franklin Valveless Gas Drilling Engine

For Cable Tool Drilling

A drilling engine operated on natural gas which eliminates excessive fuel bills, water supply, moving expense and lubrication and affording a perfect drilling unit with no adjustments necessary during the entire drilling operation. One man can easily start this Franklin.

Prices

Complete with Self-Oiling Reversible Drilling Clutch and Circulating Pump.

Sizes for Mid-Continent and Western Service
$1,725 and $2,150—F. O. B. Factory

Sizes for Eastern Service
$1,450 and $1,725—F. O. B. Factory

Franklin Engines Will Do Everything Steam Will Do

LESS ENGINES

AT EVERY TURN

More Efficient Gas Lift Operation

Cost Deserves More Consideration Than It Has Been Given in Some Quarters, R. P. McLaughlin Says

By R. P. McLaughlin*

Exact information as to performance of the gas lift from the mechanical engineering standpoint, is difficult to obtain. There are now several hundred wells producing in California fields by means of the gas lift, and a survey of results shows that the gas lift has increased production at these wells by approximately 60 per cent. Similar or even larger figures describe results in Mid Continent fields.

Such an increase in output of oil is so satisfactory, from the standpoint of the average oil producer, as to not encourage investigation looking to more efficient operation.

The cost of lifting oil by compressed gas varies from 3 cents to 15 cents per barrel of oil, depending upon the efficiency of the gas lift. A difference of 10 or 12 cents per barrel of oil in price is immediately noticed by an oil operator and the cost in production is as real to him as is the price of his product. Therefore, the efficiency of gas lift process deserves more consideration than it has been given in some quarters.

It has been found that there is a wide variation between different operators and at different wells in the amount of gas used per barrel of oil lifted. Some of the most efficient operations show oil being lifted with only slightly over 400 feet of gas per barrel of oil. (1. Mining & Metallurgy, May, 1925, p. 235). On the other hand, wells are being flowed and used as high as 3,000 feet per barrel of oil.

The cost of compressing gas to 300 or 400 pounds varies from 3 to 5 cents per 1,000 feet of free gas. This figure has been obtained from a number of sources and as a matter of fact is the basis of actual business transactions involving gas compression. The cost of lifting oil with compressed gas is thus determined.

In view of the scanty data relative to gas lift efficiency, it seems quite timely to call attention to an article published by A. W. Purchase (2. Proceedings of the Institution of Mechanical Engineers, London, November, 1917, pp. 613-699). An engineer desiring greater efficiency with either the gas lift or air lift should obtain this article, which gives considerable data from the author's own tests and experiments at water wells and also has a good bibliography of important articles and books.

Footpiece Important

The subject of the footpiece on the gas lift is not receiving the attention it deserves. (3. Bulletin American Petroleum Institute Vol. 7. No. 27, p. 108). In most cases the footpiece is either used or omitted, depending apparently upon the whim of the man in charge of the operation. The experiments made by Mr. Purchase indicate that a footpiece does have a direct bearing upon the efficiency of an air lift handling water, and it is reasonable to assume that the same will be found true when sufficient experiments have been made with various kinds of footpieces at oil wells The flow of liquids follow natural laws which are not developed except by accurate experiment and observation.

Some operators who are primarily interested in the amount of oil obtained have proceeded upon the theory that if a little gas would lift oil, more gas would increase the production accordingly. Theoretically it would be possible to introduce gas in such large quantities that no oil whatever could flow from the well. In actual practice it has been found that a reduction in the amount of gas used will sometimes actually increase the output of oil.

The principle upon which the gas lift depends is not widely understood and many attempts have been made to flow oil wells by some process similar in action to that of an injector. In order to raise a particle of oil from the bottom of an oil well by means of an injector, it would have to be given an initial velocity sufficient to actually shoot the particle to the surface of the ground, or, in other words, the initial velocity would have to be equal to the velocity obtained by the particle of oil which had fallen an equal distance. Many footpieces and proposed methods of flowing oil wells have involved this misconception and, therefore, some prejudices against footpieces may have thus been obtained.

The objects to be obtained by use of a footpiece are well stated by Mr. Purchase in the above mentioned article. He shows that one of the principal sources of lost power in the use of the air lift is occasioned by velocity losses, such as eddies or other turbulences and proposes that the entrance passage of a footpiece should be so designed as to avoid these losses. It is also shown that when the gas or air is introduced into the liquid in a finely subdivided state, more efficient action is obtained than if the air enters in large bodies or gulps.

Velocity and Density

Brief consideration of velocity and density as they actually occur in a 4,000-foot well, while flowing by means of the gas lift process, may serve to more clearly visualize conditions. If 500 feet of gas is used to lift a barrel of oil for a distance of 4,000 feet through 2½ inch tubing and 400 bbls. of oil are being flowed daily, the velocity at the bottom of the tubing is about 210 feet per minute, while at the top of the tubing it is about 4,120 feet per minute. In other words the speed increases from a leisurely walking gait to nearly 50 miles per hour due to the expansion of the gas which started upward under a pressure of about 350 pounds per square inch and reaches the top at about atmospheric pressure.

It is also interesting to note that immediately after the gas mixes with the oil at the bottom of he tubing (500 feet of gas per barrel of oil) the oil occupies only about 20 per cent of the total volume and when the mixture reaches the top the oil occupies only about 1 per cent of the volume. In other words the mixture starts with approximately the consistency of froth and emerges in the form of an oil laden mist.

In considering the foregoing figures showing changes in velocity and volume it should be remembered that the amount of gas per barrel of oil in those figures (500 feet) is only about one-quarter or one-half the amount which is sometimes used and that the assumed daily outrut of the well (400 bbls.) is only one-third or one-half of the amount actually raised at many wells. Therefore, the mixture coming from some wells carries only a small fraction of 1 per cent of oil and has a velocity of 8,000 feet per minute or more.

The success of the gas lift at various wells has upset some theories as to rate of decline of production. It has not yet been determined what rule or theory will serve in wells which are susceptible to the use of the gas lift.

The writer assumed two years ago, when first describing this feature, that the gast lift would merely make up the difference in oil produced between the amount which the pump could take out and the theoretical amount shown by a regular decline curve. (1. Mining & Metallurgy, May, 1925, p. 235). However, it has been found in actual practice that instead of declining, some wells hold up their production at a practically constant rate for almost two years.

*Before Tulsa meeting of the A. I. M. & M. E., October 12.

Improvements in Drilling Methods

Experience On the Gulf Coast Leads to Important Changes in Oil Production Operations

By Joe H. Russell*

It would seem that with the great number of wells being drilled in the Gulf Coast there should be a great demand for and an opportunity to improve the methods of drilling wells and of producing oil from them. As a matter of fact along with the demand and necessity for new and improved methods in operation there have been some improvements made.

We are now passing through a strenuous drilling campaign at Spindletop and the quickest methods of drilling and completing wells are much too slow. Therefore, not a great deal of thought has been given to any new methods. However, you can not help but compare the present method and equipment used in the present day drilling campaign at Spindletop with the drilling campaign that occurred there in 1901. The differences in equipment and methods are staggering and the present day operators can hardly imagine how the old operators ever were able to drill a well. The "old-timers" explain the reason as being that, "Men were men in those days and not much machinery was necessary." Yet the development in 25 years of thought and study to the changed conditions of operations has brought about a great improvement in equipment and in methods.

I believe there has been a great deal more thought given to the development and improvement of drilling equipment and methods and to the completion of wells than has been given to the actual production operations.

Drilling Methods and Equipment

The greatest improvement that has been made in the methods of drilling and completing wells in the Gulf Coast is the improvement made in the rotary equipment machinery used in drilling. Equipment more suitable and applicable to the duty imposed in drilling wells has been and is being steadily developed. The operators are now studying and are beginning to find out just what work, what duty the machinery will have to perform before a well can be drilled to the various depths in the quickest time and in the best possible manner.

I think more than ever before the oil operator is making "careful diagnosis of drilling conditions," such as the character of formations to be drilled, the depth of the hole, the size of the hole, the manner and sizes of pipe to be set, the time required to drill to certain depths, then he knows what duty his equipment must be able to withstand and accordingly he designs the equipment to be used to perform the duty in the most workmanlike manner and in the quickest time. The drilling operation necessarily is becoming more and more a problem for the technical man who is practical. The technical man's duties are to diagnose and determine the faults and shortcomings of the methods, and the practical man, along with the technician, must correct them. We are endeavoring to design and specify just what kind of equipment is necessary and are not leaving it entirely in the hands of the manufacturer to give us what they think we need.

The keeping of complete progress records during the drilling of a well, charts which indicate and record time and energy consumed, amount of hole made, kind of formation drilled, during each minute's operation, has opened the way for a complete scientific study to determine the best method of drilling. For instance, it has been determined accurately and with no guesswork that during the progress of drilling a 3,469-foot well in a Gulf Coastal field, which consumed 33 days, that only 17 per cent or 5.61 days was the drill bit actually on bottom making hole. That 33 per cent of the time the slush pump was in operation. The balance of the time was used in going in and coming out of the hole, setting casing, making pipe connections, repairs to rig, circulating, and waiting on material.

Actual records of time were taken to indicate how long it required to drill a foot in many different kinds of formations with different weights of drill bit on bottom and revolutions of rotary table.

Bit on Bottom Longer

From this information it would appear that an effort would be made to develop our machinery and improve our method so as to permit the drill bit to be on bottom a greater percentage of time, and to determine how each formation should be drilled to the greatest advantage.

For instance, had our drilling machinery and methods permitted the bit to have been on bottom 25 per cent of the time with a corresponding amount of hole drilled, the well would have been completed in 2.6 days quicker time, which in labor, fuel and flush production would be a considerable amount of money.

I think that one method of increasing the time of the drill bit being on bottom making hole will be by the use of collapsible bit. It is destined to become more and more in use. Several test wells have been drilled with varied degrees of success. However, if it can be perfected and proven practical it will reduce the time of drilling a well at least 30 per cent as bits can be changed, cores taken without pulling drill stem. The saving in labor, wear and tear on equipment, fuel will be very great as compared with the present method.

The high pressure, large horsepower boilers, the twin cylinder engines, the enormous slush pumps, the three speed heavy draw works, the make and break rotary, the large traveling blocks, the

(Continued on Page 112)

*Before Tulsa meeting of the A. I. M. & M. E., October 12.

Other Manufacturers of Swabs Flatter Us and Convince Us That We Are Right When We Say

The Burt Swab

Trade Mark Registered U. S. Pat. Office

is the best

They have copied our swab body, they have tried to reproduce our swab rubber. In selling they say theirs is as good as the Burt

In fact one supply company has sold a counterfeit and made the claim it was a Burt

What better proof can there be that where Burt leads, others try to follow? No one wants to follow a tail-ender.

The man or company that misrepresents may be sorry.

The man who buys the genuine Burt never will regret it

Sold By All Supply Dealers

Manufactured by The Burt Corporation

325 E. 4th Street **Tulsa, Oklahoma**

ARTESIA, NEW MEXICO

(Continued from Page 50)

from 1,300-foot sand; Empire Oil & Gas Co.'s No. 2, NW NW, Section 2-18-27, oil sand at 420 feet; Flynn, Welch & Yates' No. 10, NE SE, Section 29-18-28, drilling below 2,160 feet; Flynn, Welch & Yates' No. 52, Section 28-18-28, on production; Flynn, Welch & Yates' No. 53, Section 32-18-28, drilling below 1,800 feet; Hamilton Petroleum Co.'s No. 1 Billings, Section 12-19-26, cementing casing; Hasenfuse Donley's No. 2, NE, Section 13-18-28, shut down below 2,600 feet; Henderson, Dexter & Blair's No. 1, NW, Section 9-19-28, repairing derrick at 2,100 feet; Levers and Carper's No. 4, SE cor. SE NW, Section 3-18-28, drilling; Maljamar Oil & Gas Corp.'s No. 14, NW cor. NW, Section 28-18-28, deepening hole, shut down at 2,440 feet, awaiting repairs; Navajo Oil Co.'s No. 2, SW, Section 28-17-28, drilling below 1,500 feet; Ohio Oil Co.'s No. 7 Toomie Allen, SW SE, Section 28-18-28, drilling below 2,070 feet; Phillips & Welch's No. 1, Section 18-18-28, drilling below 1,515 feet; Pueblo Oil Co.'s No. 1, NE SW, Section 33-17-28, cleaning out after shot; Rehn and others' No. 1 Winans, NW NE, Section 15-18-26, making pumping test; Sun Oil Co.'s No. 1, Section 21-25-30, drilling below 2,200 feet; Skelly Oil Co.'s No. 1, NE cor. Section 22-17-31, capped; Bruce Sullivan's No. 1, SW cor. Section 1-18-31, awaiting casing; Wooley & Jones's No. 1 Beeson, SE cor. Section 33-17-30, shut down at 3,300 feet; Wooley, Jones's No. 1 Danciger permit, Section 21-17-30, moving to new location in NE SE, Section 21-17-30; Williams Petroleum Co.'s No. 5, Section 17-18-28, drilling below 800 feet.

Chaves County

Etz, De Vito's No. 1, NW SE, Section 24-11-25, drilling below 850 feet; Gibson Oil Corp.'s No. 1 Forsyth, C NE, Section 8-11-23, shut down at 690 feet; Hall and others' No. 1, Section 8-14-24, drilling below 800 feet; Rogers and others' No. 1 in the SW NW, Section 14-11-26, on production, plugged back to 1,285 feet; The Texas Company's No. 1 Dunken Dome, SW, Section 29-17-18, drilling below 2,110 feet.

Lea County

Cap Rock Oil & Gas Co.'s No. 1, SE, Section 11-16-32, below 650 feet; W. P. Cooper's No. 1, NW, Section 27-19-38, drilling; J. S. Covert's No. 1, Section 15-21-33, shut down at 1,100 feet; Exploration Co.'s No. 1, NE, Section 15-19-35, spudded in; Henderson, Dexter & Blair's No. 1 Wyatt, SW SW, Section 34-17-33, underreaming at 775 feet; Inglefield and others' No. 1, Section 4-17-34, pulling pipe; Maljamar Oil & Gas Corp.'s No. 1, SE, Section 16-17-32, drilling at 830 feet; Mescalero Petroleum Co.'s No. 1, Section 27-19-38, drilling below 650 feet; Maljamar Oil & Gas Corp.'s No. 1 Grace Mitchell, SW, Section 5-17-32, drilling at 700 feet; T. P. McDonald's No. 1, NE, Section 22-18-34, fishing at 700 feet; Ohio Oil Co.'s No. 1 Pearl Miller, Section 35-17-32, rigging up; Ohio Oil Co.'s No. 1 William Mitchell, NE SW, Section 18-17-32, drilling below 2,295 feet; Prairie Oil & Gas Co.'s No. 1, NE NE, Section 34-18-32, location made.

KANSAS FIELDS

(Continued from Page 45)

leum Co.'s No. 2 Nicon, NE cor. SE, Section 26-24-10e, sand at 1,831-58 feet, shot with 90 quarts, made 150 bbls.; No. 3, NE cor. SE SE, sand at 1,810-24 feet, shot with 95 quarts, made 200 bbls.; No. 4, SE cor., sand at 1,828-57 feet, shot with 75 quarts, made 70 bbls.; Manhattan Oil and others' No. 1 Edwards, SE cor. NE, Section 35-24-10e, dry and abandoned at 2,000 feet; Ward-McGinnis' No. 1 Mock, NE cor., sand at 1,822-60 feet, shot with 100 quarts, made 300 bbls.; Crawford & McKenna's No. 1 Freeman, SW cor. NE, Section 6-24-11e, sand at 1,841-51 feet, shot with 60 quarts, made 55 bbls.; The Texas Company's No. 1 McGilvrey, SE cor. SE NE, Section 17-23-11e, sand at 1,921-72 feet, shot with 140 quarts, made 240 bbls.; Shaffer & Howell's No. 14 Schneider, C SW NW, Section 15-23-13e, sand at 1,520-1,670 feet, shot with 60 quarts, made 50 bbls.; Mid-Continent Petroleum Corp.'s No. 12-B Dehlinger, NE cor. SW NE, Section 29-23-13e, sand at 1,658-80 feet, shot with 60 quarts, made 20 bbls.; Empire Gas & Fuel Co.'s No. 15 Kipfer, NE cor. NW SE, Section 11-22-11, sand at 1,761-1,841 feet, shot with 200 quarts, made 200 bbls.; No. 6 Bartlett, SW cor. NE SE, Section 15-22-11e, sand at 1,879-1,910 feet, shot with 40 quarts, made 50 bbls.; York State Oil Co.'s No. 14 Marshall, NE cor. SE, Section 32-22-11, sand at 1,910-50 feet, shot with 40 quarts, made 10 bbls.; Simmons and others' No. 4-B Fankhouser, SE cor. SW NE, Section 4-22-12, sand at 1,805-34 feet, shot with 120 quarts, made 150 bbls.

Greenwood County New Work

Joe Able and others are spudding No. 1 Short, SE cor. SW NW, Section 3-24-11; Lenard Petroleum Co.'s No. 1 Bell, SW cor. NE NW, Section 1-23-10, is a rig; W. H. Swartz' No. 1 Brown, NE cor. SW, Section 36-23-10, is a rig; George Snyder's No. 1 Baker, SE cor. NE SW, Section 13-23-11, is drilling at 300 feet; The Texas Company's No. 1 Edwards, NE cor. SW SW, Section 16-23-11, is a rig; Jennings Brothers Co.'s No. 1 Hartshorn, NE cor. SE, Section 17-23-11, is a rig; Theta Oil Co. is rigging up machine for No. 24 Schneider, CNL NW SW, Section 10-23-13; Syndicate Oil Co.'s No. 4 Bradfield, SE cor. NE SE, Section 2-22-10, is drilling at 450 feet; Hazlett and others' No. 23 DeMalorie, NW cor. SE NE, Section 12-22-10, is drilling at 740 feet; Theta Oil Co.'s No. 17 Browning, SW cor. NW NE, Section 17-22-10, is a rig; Sinclair Oil & Gas Co.'s No. 49 Browning, C NE SE, Section 19-22-10, is a rig; same company is spudding No. 50 Browning, NW cor. SE NW, Section 20-22-10; Hazlett and others are rigging up No. 9 DeMalorie, SE cor. SW SW, Section 7-22-11; White Eagle's No. 1 Yearout, SE cor. NE, Section 10-22-11, is drilling at 200 feet; Empire Gas & Fuel Co.'s No. 7 Duby, SW cor. Section 14-22-11, drilling at 1,000 feet; York State Oil Co. is rigging No. 16-B DeMalorie, NE cor. NW SW, Section 32-22-11; Mid-Continent Petroleum Corp. is rigging up No. 2 Fankhouser, SE cor. SW, Section 4-22-12; Empire Gas & Fuel Co.'s No. 1 Schwab, SW cor. SE SE, Section 25-22-12, drilling at 340 feet; Enterprise Development Co. is spudding No. 1 Todd, NW cor. SW NW, Section 9-22-13; Braden Brothers are rigging up No. 1 Wagler, SE cor. SW SE, Section 22-22-13.

Lyon County Completions

Transcontinental Oil Co.'s No. 7 Atyeo, NE cor. SW SW, Section 30-21-10, sand at 2,167-2,235 feet, shot with 140 quarts, made 100 bbls.; Chris Sheedy and others' No. 14 Atyeo, NW cor. SE, Section 31-21-10, sand at 2,240-64 feet, shot with 70 quarts, made 50 bbls.; Emerald Oil Co.'s No. 1 Rossillion, SW cor. NW SW, Section 19-21-11, dry and abandoned at 2,512 feet.

FARMINGTON, N. MEX.

(Continued from Page 45)

be a little deeper there than on the Rattlesnake or Hogback structures.

W. R. Childers, operating on the Ute Pasture structure, Section 24-31-16, 20 miles northwest of Farmington, has been successful in pulling his casing and has resumed drilling. He believes he has successfully sidetracked the joint of casing at the bottom which was shot off and is now in position to go after production. As the hole was a little over 2,000 feet it will not take very long to reach the Dakota if, as he believes, he has successfully disposed of the casing at the bottom.

E. J. Miley, operating on the Red Mesa structure, Section 32-33-12, about 20 miles north of Farmington, has reached a depth of 1,200 feet at the last report and was drilling in a rather hard shale that was seamy. The Hall well, on the Red Mesa structure, is reported to be holding up in production and has been supplying the Miley well and furnishing some to the Kittell refinery. No sale has been announced, although negotiations are still reported to be going on.

Material for the McCausland-Nelson well, on the Red Mesa structure, which is located north of the other wells so far drilled, is being freighted in and preparations for drilling are going forward.

The Union Oil & Mining Co., operating in the Blanco district, Section 8-29-9, is still waiting for a new line before starting its fishing job. The well is showing considerable gas and the management feels confident of final oil production.

Kutz Canon District

The Congress Oil Co., operating in the Kutz Canon district, Section 34-29-11, is running casing this week with the prospect that drilling can be resumed the latter part of this week or the first of next. As the casing is being lowered and the hole cleaned out an increased gas flow follows. Considerable delay was caused by the wait on casing but the management is now confident it will be able to push on to production without further delay. It will resume drilling at a depth of 1,665 feet.

The Ross-Bloomfield Royalty Co. is still drilling in the Bloomfield district, Section 11-29-11, 10 miles east of Farmington, and has reached a depth of 2,600 feet. It is making good progress considering it is drilling inside a 4-inch casing.

The Midwest Refining Co. is moving in a rig to drill the Chaco structure, near the San Juan and McKinley County line, not far from the Pueblo Bonito ruins. It is stated it will use a rig and start with a 20-inch hole.

The Williams well, No. 4, in the Liberty Valley, Section 30-30-15, is reported to have had a good showing of oil at a depth of 1,665 feet. This was mudded off and the well is going down and now around 1,700 feet.

Paul S. Ache and others, who are drilling on the Monero structure in Rio Arriba County, are now down over 1,000 feet with the Dakota sands as their objective. They have been making good progress since starting their well about the middle of September.

The Southwestern Development Co., operating on the Atteberry place, 6 miles north of Aztec, is closed down while the field superintendent is in the East consulting his financial backers.

North of Aztec

The Aztec Petroleum Co., drilling on the McCoy tract north of Aztec, has reached the 1,200-foot depth for which it contracted and has closed down for the present. The well is located on Section 9-30-11.

The Portage Oil & Gas Syndicate, operating on the Glade structure, Section 24-30-13, 6 miles northeast of Farmington, has at last overcome the streak of bad luck and making good progress in drilling. It has 6-inch casing run to a depth of 1,500 feet and the drill is moving along at a satisfactory rate. The drillers and managers are in good spirits again after their long delays and disappointments.

Erdman announces that another well will be put down on the Erdman-Julian acreage on the Red Mesa structure and that the location will be made by the geologist of the Julian Petroleum Co., which is jointly interested with him.

James I. Harvey and associates were here this week and made location for a test well on the SW, Section 15-30-16, and announce they will begin drilling before the end of the month. Mr. Harvey's company is composed of Wichita Falls and Fort Worth, Tex., oil operators. These people control the tract in the southwest corner of the Ute Pasture, which is 2½ by 3 miles and joins the Childers lease on the west, and runs to the Navajo Reservation line. They also own the Little Shiprock structure on the Navajo Reservation, both of which, they state, will be drilled next spring. The land on which the location was made is a part of the holdings of the Santa Fe-San Juan Syndicate.

GULF COAST FIELDS

(Continued from Page 46)

No. 9 Counselman is drilling around 1,345 feet. The Gulf Production Co.'s No. 63 Choate is at 1,165 feet. Same company's No. 1 Cruse, a deep test on the southwest side, is drilling around 3,125 feet. Locations have been made for East Batson Oil Co.'s No. 14 State land, Paraffine Oil Co.'s No. 68 Paraffine and the Sterling Oil Co.'s No. 5 Hooks.

The Rio Bravo Oil Co. has a location for No. 46-C, in the Saratoga Pool.

Orange and Other Pools

In the Orange Pool, the Rex Petroleum Co.'s No. 2-B Carbello is pumping 35 bbls. at 4,025 feet. Orange Petroleum Co.'s No. 7 Chesson bailed salt water at 4,000 feet. The Humble Oil & Refining Co.'s No. 2 Winifree is bailing at 3,575 feet, as is the Rycade Petroleum Corp.'s No. 1-C State land in Cow Bayou, at 3,910 feet.

The Gulf Production Co. will deepen No. 1 McGuire from 3,470 feet. The Humble Oil & Refining Co.'s No. 10 Winifree is sidetracking at 1,300 feet. The Brownie Babbittee Oil Co.'s No. 7 McLean is drilling deeper. The Texhoma Oil Co.'s No. 9 Chesson is drilling around 4,600 feet.

At High Island, Galveston County, the Sun Oil Co.'s No. 8-C Cade is fishing at 4,890 feet and No. 11 Vade is drilling below 2,800 feet. No. 10 Lockhart is at 1,235 feet.

On the north side of the West Columbia Pool, The Texas Company's No. 8 Hogg is around 3,065 feet, and No. 12 Abrams is below 1,875 feet. The Hyde Production Co.'s No. 2 Masterson is drilling on the northeast side at 2,355 feet.

At Blue Ridge, Fort Bend County, the Gulf Production Co.'s No. 9 Luscher, on the east side of the uplift, is drilling around 2,980 feet. A location has been made for No. 9-B Blakely. The Sinclair Oil & Gas Co.'s No. 1 Davidson is at 3,780 feet. On the south flank, the Humphreys Corp.'s No. 1 West-Schenck is below 1,455 feet. The Gulf company has a location for No. 7 West-Schenck. On the west flank, the Texhoma Oil Co.'s No. 2 Booth is drilling deeper. The Navarro Oil Co.'s No. 1 Robinson is rigging.

The Rycade Petroleum Corp. is starting No. 10 Wisdom at Nash Dome and the Gulf Production Co.'s No. 34 Davis at Big Creek Pool.

In the Boling Pool, The Texas Company's No. 2 Felder is below 4,065 feet. No. 1 Farmer, on the northeast side, is at 4,185 feet. The Sun Oil Co.'s No. 1 Farmer is at 2,075 feet. Weed and Gayle's No. 7 Feltz is drilling in the cap rock section on the dome.

South Louisiana Pools

In the Jennings Pool, the Utropal Oil Co.'s No. 1 Nible bailed salt water at 1,775 feet, as did the General Petroleum Co.'s No. 1 Fintent at 1,700 feet.

F. I. Gett's No. 11 Chicago-Jennings is shut down at 1,400 feet. The Texas Company's No. 105 Latrielle is at 1,795 feet and No. 1 Bayne at 4,235 feet. The Jennings Oil & Gas Co.'s No. 1 Price is around 3,125 feet with a location for No. 2. The Utropal Oil Co.'s No. 1 Noble is deepening.

In the Edgerly Pool, the Edwards Oil Co.'s No. 4 Landry is rigging. The Rex Petroleum Co.'s No. 3 Hunter is fishing at 3,925 feet.

In the Lockport Pool, the Vacuum-Gulf company's No. 8 Miller is repairing derrick and drilling shut down at 4,400 feet. No. 10 Miller is drilling around 5,450 feet. A location has been made for No. 12. No. 6 Miller is fishing. No. 1 Farquhar blew out at 3,735 feet. A derrick is up for No. 4. No. 3 Friedberg & Wolf is around 2,000 feet. A derrick is standing for No. 4 Bordages. No. 1 Bayou D'Inde is drilling at 3,735 feet, and No. 2 is around 1,975 feet. No. 4 Lock-Moore is at 6,000 feet.

Outside of the Pools

In Fort Bend County, the Gulf Production Co. abandoned No. 16 Davis at Long Point in gyp at 765 feet. No. 15

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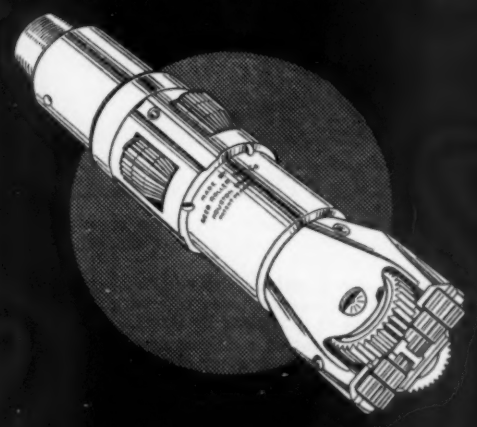

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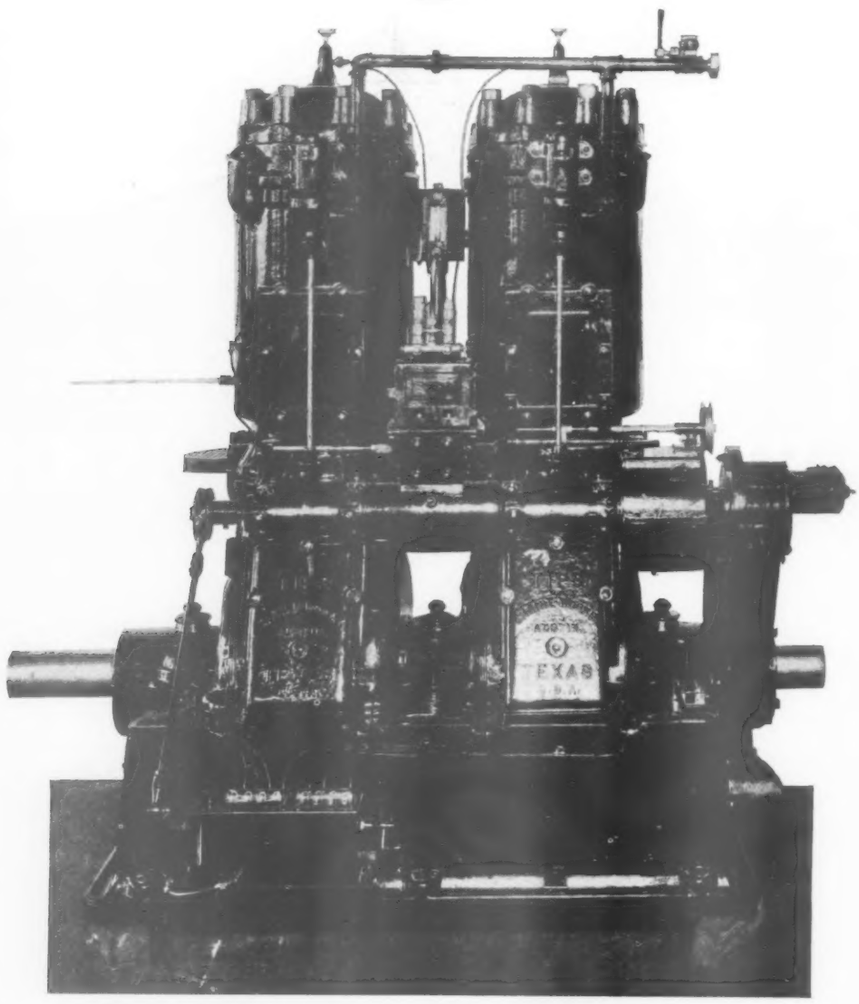

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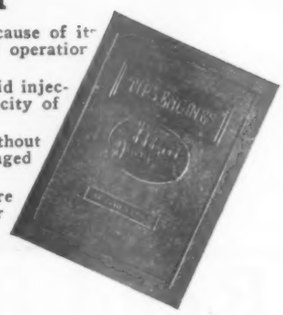

TIPS ENGINE WORKS

AUSTIN, TEXAS

TIPS

Davis is drilling around 3,234 feet, and No. 17 at 1,235 feet.

In Harris County, Kelly and others' No. 1 Lipper, near Aldine, abandoned at 3,215 feet. Gwynn and others' No. 1 Cage, near Huffman, abandoned at 1,340 feet. Brain and others' No. 1, north of Spring, is around 1,400 feet. Williams and others' No. 1, near Westfield, is fishing at 3,600 feet.

In Liberty County, George Leland's No. 1 Grogan Lumber Co. lands, north of Dayton, abandoned at 840 feet.

In Angelina County, Lufkin Drilling Co.'s No. 1 Montooth abandoned at 1,340 feet. The Humble Oil & Refining Co.'s No. 1 Henderson is drilling around 2,900 feet. Van Hatcher & Co.'s No. 1 Kountz is at 2,145 feet.

Matagorda County: At Hawkins Dome, Gulf Production Co.'s No. 1 Parkinson is drilling around 4,200 feet.

Jefferson County: Gulf Production Co.'s No. 2 Bordages. Fannette Dome, is drilling around 5,135 feet. No. 9 Thomas is around 2,235 feet. The Port Arthur Development Co.'s No. 4, at Westbury, is drilling around 1,600 feet. T. A. Brooks is drilling a test near Nederland.

Lavaca County: Hamill Drilling Co.'s No. 1 is preparing to abandon around 3,000 feet.

Chambers County: Osage Oil Co.'s No. 1 State land, near Moss Bluff, is drilling around 2,217 feet.

Brazoria County: Clemens Dome, Roxana Petroleum Corp.'s No. 1 Pabst is drilling at 1,514 feet. No. 3 Clemens is drilling below 2,600 feet. Allen Dome, Roxana Petroleum Corp.'s No. 1 River is rigging. No. 3 Allen is drilling at 2,597 feet. At Rattlesnake Mound, The Texas Company's No. 1 Mayes is rigged.

Wharton County: J. W. Rich and Humphreys Corp.'s No. 1 Moline is drilling around 1,800 feet in sand.

Montgomery County: Roxana Petroleum Corp. is making formation tests east of Splendora. Gulf company's No. 1 Foster Lumber Co. is idle.

Walker County: Arkansas Fuel Oil Co.'s No. 1 Bolden is a derrick.

Milam County: The Texas Company's No. 2 Kuykendall was abandoned at 2,780 feet. Lyles and others' No. 1 Batte is idle at 2,735 feet. In the Rockdale-Minerva shallow sand district, the Wahpoo Oil Co.'s No. 10 Gross is drilling, with No. 11 rigging. The Chicago Oil & Land Co.'s No. 2 White is drilling, and also Eisenmanayer and others' No. 1 Bartlett.

South Louisiana Parishes

The Pure Oil Co.'s No. 3 Sweet Lake, in the southeast part of Cameron Parish, is testing at 4,400 feet. It is 35 miles from production.

The Standard Oil Co. of Louisiana is drilling No. 4 Industrial Lumber Co. at Stark Dome, Calcasieu Parish.

In Jeff Davis Parish, the Utropal Oil Co. has started No. 1 Ledoux.

The Gulf Refining Co. is drilling No. 1 Levy in St. Mary's Parish.

PRODUCTION PEAK PASSED IN SPINDLETOP?

(Continued from Page 46)

No. 8 is at 3,100 feet, No. 9 at 2,435 feet and No. 2 deepening. No. 6 Oakwood is at 3,109 feet. A derrick is standing for No. 7. No. 3 Mann is a derrick.

The Atlantic Oil Producing Co.'s No. 10 McLean is drilling around 3,875 feet. No. 11 McLean is below 3,285 feet. No. 12 is at 3,990 feet. The Sun Oil Co.'s No. 1 McLean will be deepened. No. 4 is at 3,976 feet. No. 5 is shut down. No. 6 is at 3,135 feet, and No. 7 drilling at 3,545 feet.

The New Beaumont Oil Co.'s No. 1 Garrick, some distance north of production, is deepening from 2,700 feet. The Deep Sand Oil Co. will deepen No. 1 Howell. No. 3 Howell is drilling around 3,545 feet. W. B. Flynn's No. 1 Gladys is drilling around 1,876 feet. Seiss and others' No. 1 Pierce is at 2,635 feet. Hines' No. 1 W. Ewing, at 4,050 feet. The Grayburg Oil Co.'s No. 1 McLean is at 3,975 feet. Paggi & Co.'s No. 1 Gordon is drilling deeper. The Turnbow Oil Co.'s No. 2 Banks is around 800 feet. The Kinnear Oil Co.'s No. 1 Gladys is a derrick.

The Rio Bravo Oil Co. is starting No. 53 T. & N. O., located 62 feet south of No. 5, which will convey some idea of the close drilling in the new deep sand area on the west-southwest side. The Atlantic Oil Producing Co. is rigging No. 14 McLean, only 30 feet north of its No. 1 McLean. The Gulf Production Co. will deepen Nos. 3 Weed and 1 Mann.

Ancient Lawsuit Revived

A lawsuit filed in 1901 and claiming a part of all the oil produced from land embraced in the P. Humphreys and Douthitt Surveys at Spindletop has been revived in the Sixtieth district court here, with Fred Hathaway, of Houston, and Mrs. A. E. Caswell, of Beaumont, as claimants. The suit is for four forty-ninths of all the oil produced from the property.

Not only the greater part of the old Spindletop Field, but more than half of the new deep field to the southwest of the dome is affected by the suit.

Leases affected are those held by Yount Lee Co. on the Fee and McFaddin tracts; Gulf company on Oakwood, Mann, Jack & Duff and Weed tracts; Sun company on the McLean and Price tracts; all of the Magnolia holdings on its tank farm; Atlantic lease on the McLean tract, and those held by the Gaddy Maida company, L. & L. company, Rush-Pittman Oil Co., Deutser Oil Co., Turnbow Preferred Oil Co., Turnbow Favorite Oil Co. and the Walker Oil Co. In the old part of the field the suit affects all holdings in the Humphreys survey, including all of the property held by the Unity Oil Co., which takes in the site of the old Lucas gusher, first well brought in at Spindletop.

The present suit is a combination of three suits brought 25 years ago, and is by Mrs. A. E. Caswell and Fred Hathaway against D. W. Lewis, W. P. H. McFaddin, V. Wiers, W. W. Kyle, A. F. Lucas, J. M. Guffey, John H. Galey, J. M. Guffey company, J. M. Guffey Petroleum Co., P. M. Hebert, Higgins Oil & Fuel Co. and the heirs of Jeff Chaisson, deceased. The original suits were styled Thomas Anderson and others versus A. F. Lucas and others, W. P. H. McFaddin and others versus Sam P. Halliburton and others, and Andrew McMillan and others versus A. F. Lucas and others.

In 1909 the suit was dismissed by all parties except George W. Kidd and Fred Hathaway, and the present trial is a final settlement of the case. Mrs. Caswell is named as successor to the George W. Kidd estate.

OKLAHOMA FIELDS

(Continued from Page 45)

Ian & Henry are rigging up No. 2 Daniel, SE cor. NE SW, Section 20-14-10; T. B. Slick's No. 2 Thornton, CSL NE SW, Section 32-14-10, is drilling at 1,150 feet.

Tulsa County Completions

Sands Springs Home's No. 1 Arch, NW cor. SE SE, Section 23-19-11, is dry and abandoned at 2,321 feet; A. A. Thornton has a dry hole in No. 1 Bright, CSL NW SE, Section 35-19-11, at 2,474 feet.

Tulsa County New Work

E. A. Craig and others are spudding No. 1 Ernest, NW cor. SW SW, Section 17-19-10; W. E. Holmes is moving in machine for No. 5 Bemore, NW cor. NE NE, Section 18-19-10; Mid Kansas Oil Co.'s No. 1 Van Regan, SE cor. SW SE, Section 24-19-10, is a rig; Bu-Vi-Bar Petroleum Co.'s No. 1 Weaver, NW cor. SE SE, Section 29-19-10, is spudding; Glidden Oil Co.'s No. 1 River Bed, CWL NW SE, Section 15-19-11, is drilling at 400 feet; Sand Springs Home's No. 1 Steel, SE cor. NE SW, Section 23-19-11, is drilling at 1,700 feet and No. 2, NE cor. SE NE, drilling at 490 feet; Straughn-Edwards' No. 2 S. Burgess, NE cor. SE, Section 18-18-14, is drilling at 500 feet.

Payne County Completions

Empire Gas & Fuel Co.'s No. 5 Hayes, SE cor. NW NW, Section 26-18-3, had sand at 4,297-4,339 feet, made 70 bbls.; Consolidated Drilling Co.'s No. 1-A Walsh, CEL SW NE, Section 8-18-6, shot with 30 quarts from sand at 2,825-60 feet and 80 quarts from sand at 3,000-45 feet, made 15 bbls.

Payne County New Work

New England Oil Co.'s No. 4 Broyles, SE cor. NW NW, Section 26-18-4, is a rig; Mulberry Oil & Gas Co. is spudding No. 3 Ballard, SE cor. SW SW, Section 32-18-4; Skelly Oil and Mulberry Oil Co.'s No. 3 Ballard, SW cor. SE SW, Section 32-18-4, is drilling at 1,200 feet.

Lincoln County Completions

Mid-Continent Petroleum Corp.'s No. 8 Earp, SE cor. NW, Section 8-15-6, had sand at 4,030-35 feet, made 100 bbls. naturally; Sinclair Oil & Gas Co.'s No. 1 School Land, SE cor. NE, Section 16-15-6, dry and abandoned at 4,352 feet.

Lincoln County New Work

J. A. Hull is spudding No. 1 Alley, NE cor. Section 27-15-6; Amerada and Madden & Madden's No. 1 Hemming, NW cor. SW SE, Section 34-15-6, drilling at 1,010 feet.

Okmulgee County Completions

Transcontinental Oil Co.'s No. 1 Kelly, NE cor. SW, Section 3-15-14, had sand at 1,509-18 feet, shut in for 5,000,000 feet of gas; The Texas Company's No. 7 Bruner, SE cor. Section 16-15-14, had sand at 2,263-79 feet, shot with 20 quarts, made 80 bbls.; Kingwood Oil Co.'s No. 1 Lacy, SW cor. NW SW, Section 7-14-13, had sand at 2,114-38 feet, made 30 bbls.; McCullough Oil Co. and Hazlett's No. 1 Berryhill, NW cor. SE NE, Section 19-14-13, dry and abandoned at 2,923 feet; Misner's No. 6 Love, CEL SW NE, Section 16-14-14, dry and abandoned at 1,765 feet; C. T. Smith's No. 1 Corbray, NE cor. SW NE, Section 23-14-14, had sand at 1,030-40 feet, shot with 10 quarts, made 10 bbls.; Simms Oil Co.'s No. 4 Dunn, SE cor. NE, Section 21-13-14, dry and abandoned at 1,980 feet; Cumberland Oil Co. has abandoned location for No. 1 Sarah Fox, NE cor. NW NW, Section 22-13-14; E. J. Lambert's No. 10 Free, CWL NE NW, had sand at 1,973-2,012 feet, shut in for 1,000,000 feet of gas.

Okmulgee County New Work

Tarpin and others' No. 2 Depriest, CSL SE SW, Section 19-15-13, is a rig; J. W. McCulloch Oil Co. is spudding No. 5 Alexander, C SE SW, Section 18-15-14; Culp and others are rigging up machine for No. 6 Vanderslice CEL NE SE, Section 30-15-15; Jack Summers is spudding No. 1 Durant, SE cor. NE, Section 30-15-15; E. A. Hutchinson is building rig for No. 6 Drew, SE cor. SW SW, Section 31-15-15; J. M. Kessler's No. 1 Roberts, NW cor. SW NE, Section 7-14-13, is a location; E. A. Hutchinson is spudding No. 5 Henry Starr, NW cor. SE, Section 2-14-14; George Simon's No. 3 Bradford, NE cor. NW SW, Section 19-14-14, is a rig; J. A. Swindler's No. 9 Lewis, C SE NE, Section 25-13-11, is drilling at 1,140 feet; Black & Rebold's No. 2 Scott, NW cor. NE, Section 27-13-11, is drilling at 400 feet; Denver P. & R. Co.'s No. 9 Thomas, CNL SW NE, Section 32-13-11, rig; Simms Oil Co.'s No. 12 Doyle, NE cor. SW SW, Section 15-13-14, is drilling at 500 feet.

Muskogee County Completions

W. R. Sommerville's No. 1 Warrior, NE cor. Section 17-15-17, had sand at 1,439-40 feet, made 480 bbls. naturally; C. M. Bradley's No. 1 Cumpton, NW cor. NE SW, Section 16-14-19, dry and abandoned at 820 feet; his No. 1 Reid, SE cor. NW, Section 18-14-19, also is dry and abandoned at 935 feet.

Muskogee County New Work

Tidal Oil Co. is spudding No. 8 Sango, CSL SE NE, Section 6-14-18; Kates & Petin are moving in machine for No. 1 Crittenden, C SW NE, Section 5-14-19; M. Musselman's No. 1 Rentie, SE cor. NW NE, Section 19-14-15, is drilling at 260 feet; Jolly and others' No. 1 Brown, CWL NW SE, Section 28-14-16, is drilling at 600 feet; Plymouth Petroleum Co. is moving in machine for No. 1 Vanderslice, SW cor. NE NW, Section 32-15-15; Future Development Co.'s No. 1 Jefferson, SW cor. NW, Section 33-15-15, is a rig; J. O. Tilley is spudding No. 1 Harrison, SE cor. SW, Section 15-15-16; H. E. Williams is moving in machine for No. 5 Morrison, NE cor. SW NW, Section 15-15-17; W. R. Sommerville's No. 1 Lewis, NE cor. NW NE, Section 15-15-17, is spudded and he is rigging up No. 1 Sango, NE cor. SE NW, same section.

Okfuskee County Completions

Independent Oil & Gas Co.'s No. 1 Cinda, SE cor. NW NE, Section 12-12-10, is dry and abandoned at 3,537 feet; it also has another dry hole in No. 13 Suger, CEL NW NE, Section 13-12-11, at a depth of 3,400 feet. Champlin Refining Co.'s No. 4 Jacobs, C SE SE, Section 15-11-11, had sand at 2,689-91 feet, made 180 bbls.

Okfuskee County New Work

T. A. Johnson Co.'s No. 1 Harjo, NE cor. SE SE, Section 25-12-9, is drilling at 620 feet; Josey Oil Co.'s No. 2 Stubblefield, C NE NW, Section 33-12-11, is a rig; Champlin Refining Co.'s No. 5 Jacobs, SE cor. Section 15-11-11, is a location; No. 2 Washington, SE cor. NE SE, same section, also is a location.

Seminole County Completions

Amerada Petroleum Corp.'s No. 1 Killingsworth "A," C SE SW NE, Section 23-9-6, had Wilcox sand at 4,128-45 feet, made 6,000 bbls.; Mid-Continent Petroleum Corp.'s No. 2 Tayeche, C NW SE SW, Section 24-9-6, had the Hunton lime at 3,906-31 feet, made 2,150 bbls.; Tidal-Osage Oil Co.'s No. 2 Mahardy, SE cor. NE SW, Section 24-9-6, had the Wilcox sand at 4,170-92 feet, made 3,535 bbls. (First oil at 4,186 feet.)

Seminole County New Work

Amerada Petroleum Corp.'s No. 5 Kincaid, NE cor. NW SE, Section 33-10-6, is a rig; Searight and others' No. 2 Youngblood, NE cor. SE, Section 33-10-6, is drilling at 35 feet; The Prairie Oil & Gas Co.'s No. 1 Thompson, SE cor. NW, Section 10-9-6, is drilling at 50 feet; Sinclair Oil & Gas Co. is spudding No. 1 Dixon, SE cor. SW, Section 13-9-6; Carter Oil Co.'s No. 1 Killingsworth, SW cor. SE, Section 14-9-6, is cementing 12½-inch at 54 feet; Mid-Continent Petroleum Corp. is rigging up No. 2 Renty, SE cor. SW SE, Section 14-9-6; McCulloch and New England Oil Co.'s No. 1 Smith, NE cor. NW NW, Section 18-9-6, is a location; Amerada Petroleum Corp.'s No. 3 Fixico, NE cor. SE NE, Section 23-9-6, is drilling at 125 feet, and No. 4, NW cor. SE NE, is drilling at 14 feet; same company on the Rentie lease in Section 23-9-6, is spudding No. 1, SE cor. NW NE; No. 2, NE cor. NW NE, rigging up; No. 3, NW cor. NE and No. 4, SW cor. NW NE, are both rigs; Carter Oil Co.'s No. 4 Carter, SW cor. NE SE, Section 23-9-6, cementing 12½-inch at 81 feet; same company is building rigs for No. 5, NE cor. SE SW, and No. 6, NW cor. NE SW, same section, on its Grisso lease; Independent Oil & Gas Co.'s No. 2 Fixico, SW cor. Section 23-9-6, building rig; Indian Territory Illuminating Co.'s No. 4 Goodin, NW cor. NE NE, Section 23-9-6, is a rig; Sinclair Oil and Transcontinental Oil Co.'s No. 2 Fixico, NE cor. SW NW, Section 23-9-6, is a rig; Tidal-Osage Oil Co.'s No. 4 Harjo, SE cor. NW SE; No. 5, C NE SW SE; No. 6, C SE SW SE, are all rigs; it is building rig for No. 7, C SW NW SE, and No. 8, NW cor. SW SE, is a location; Barnsdall Oil Corp. is rigging up No. 1 Carter, C SE SE NW, Section 24-9-6; Tidal-Osage Oil Co. is setting surface pipe at 78 feet for No. 5 Carter, C SW NW SW, Section 24-9-6; Gypsy Oil Co. is rigging up No. 2 Harjo, SW cor. NW SW, Section 25-9-6; Prairie Oil & Gas Co. is spudding No. 2 Bloss, NW cor. Section 25-9-6, and rigging up No. 4 NW cor. SW NW; Gypsy Oil Co.'s No. 6 Fixico, C SE NE NE, Section 26-9-6, is drilling at 505 feet and No. 7, NE cor. NW NE, is spudding; Independent and Garland are spudding No. 7 Fixico, SE cor. NE and No. 8, NE cor. SE NE, is a rig, Section 26-9-6; Indian Territory Illuminating Oil Co.'s No. 4 Bowlegs, SE cor. NW SE, Section 26-9-6, spudding and No. 6, NE cor. SE, and No. 7, SE cor. NE SE, are both rigs; Tidal Oil Co. is rigging up No. 7 Fixico, NW cor. NE NW, Section 26-9-6.

Hughes County Completions

Independent Oil & Gas Co.'s No. 2 McDaniel, C NW NE SE, Section 7-9-8, had sand at 3,254-85 feet, shot with 45 quarts, made 125 bbls.; Jarvis-Holmes and

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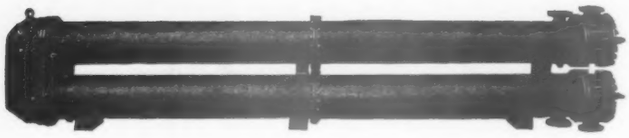

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There are several other practical service advantages that also help to explain the rapidly increasing popularity of this exchanger. Because of its twin arrangement, it is exceptionally compact and easy to inspect, clean, and transport to new locations if desired. All oil connections are at the same end to simplify piping. The construction eliminates expansion strains and likelihood of leakage or breakage.

These advantages and the features of construction of the G-R Mineral Seal Oil Heat Exchanger are explained in leaflet which will be sent on request.

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Dept. J, 285 Madison Ave., New York

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O&GJ10-14-26

Atlantic have a dry hole in No. 1 Bucker, CSL N half SW of Section 8-9-8, at a total depth of 4,070 feet; Independent and Continental's No. 3 Long, C SW NW SE, Section 32-8-8e, plugged and abandoned at a depth of 4,210 feet.

Hughes County New Work

Gypsy and Phillips Petroleum Co.'s No. 1 Island, SE cor. SW SE, Section 21-9-7, is drilling at 1,910 feet; Independent Oil & Gas Co.'s No. 5 Davis, SE cor. SW SE, Section 26-9-9, drilling at 360 feet; Transcontinental and Independent's No. 11 Harjo, C SE SE SW, Section 26-9-9, drilling at 126 feet; Producers & Refiners Corp. has rig on ground for No. 1 Shawnego, C NE SW, Section 14-7-8.

Grady County Completions

Carter Oil Co.'s No. 2 Mar-Horton, NE cor. SW, Section 8-3-5w, had sand at 1,832-41 feet, swabbed 115 bbls.; No. 2 Polson, SE cor. SW, Section 27-3-5w, had sand at 1,467-94 feet, made 20 bbls.; No. 2 White Eagle, SE cor. NW SW, Section 27-3-5w, sand at 1,210-22 feet, swabbed 45 bbls.; Todd & Anderson's No. 2 Nations, NE cor. SW SE, Section 34-3-5w, had sand at 1,479-87 feet, completed for 75 bbls. on the pump.

Grady County New Work

Amerada Petroleum Corp.'s No. 1 Gatlin, SW cor. SE, Section 6-3-5w, drilling at 50 feet; Gand and others' No. 1 Hicks, NW cor. SW SE, Section 16-3-5w, is a location; Carter Oil Co.'s No. 1 Woods, SE cor. NE NE, Section 17-3-5w, is a rig; Briscoe & Hall's No. 3 Nations, NW cor. SE, Section 34-3-5w, is drilling at 350 feet; Carter Oil Co.'s No. 3 Wham, NW cor. SE, Section 35-3-5w, drilling at 420 feet; No. 1 Cross, NE cor. NW SW, Section 35-3-5w, drilling at 71 feet.

Stephens County Completions

Gant and others' No. 1 Huffman, C SW NE, Section 25-2-4w, is dry and abandoned at 3,835 feet.

Stephens County New Work

Magnolia Petroleum Co.'s No. 1 Goza, SW cor. NE NW, Section 1-2-5w, is a rig; No. 1 Rose Dukes, SW cor. NW NE, Section 2-1-5w, also is a rig.

Jefferson County Completions

Herman Woodruff's No. 1 Seay, NW cor. NE, Section 5-7-5w, is dry and abandoned at 1,435 feet; Pender Producing Co.'s No. 1 Black, NE cor. SW, Section 25-7-4w, is dry and abandoned at 2,504 feet; Brown and others' No. 7 Seay, C WL NE NW, Section 33-6-5, dry and abandoned at 1,375 feet.

Jefferson County New Work

Gypsy Oil Co.'s No. 34 Seay, CNL NW SE, Section 33-6-5w, is drilling at 1,000 feet and No. 35, NW cor. SE, is a rig.

Love County Completions

Humble Oil & Refining Co.'s No. 1 Anderson, C NE SW, Section 2-6-1e, dry and abandoned at 1,685 feet.

Carter County Completions

Humble Oil & Refining Co.'s No. 1 Joy, SE cor. NW, Section 35-5-1w, dry and abandoned at 3,415 feet; Schermerhorn-Ardmore's No. 1 Criner, NE cor. NW NW, Section 24-5-1e, dry and abandoned at 4,228 feet; Home Oil Co.'s No. 1 Brown, NW cor. SW, Section 27-3-2e, dry and abandoned at 2,950 feet; Skelly Oil Co.'s No. 1 Smith, NW cor. SE, Section 3-2-3w, sand at 2,250-97 feet, flowed 779 bbls. first 24 hours; Magnolia Petroleum Co.'s No. 11 Lahman, NW cor. SE SE, Section 23-2-3w, sand at 2,513-20 feet, made 40 bbls.; No. 1 Williams, SE cor. NW NE, Section 23-2-3w, dry and abandoned at 3,095 feet; Merrick and others' No. 14 Bennett, CEL NE NW, Section 31-2-2w, sand at 2,816-26 feet, made 32 bbls.; Humble Oil & Refining Co.'s No. 2 Bumpass, SE cor. Section 33-1-3w, sand at 2,795-2,820 feet, made 125 bbls.

Carter County New Work

Wirt Franklin's No. 11 Pruitt, SW cor. SE NW, Section 3-2-3w, is a rig; Magnolia Petroleum Co.'s No. 2 Adams, NW cor. SE SE, Section 3-2-3w, is drilling at 700 feet; No. 4 Adams, SW cor. NE SE, is a rig; Skelly Oil Co.'s No. 3 Smith, SE cor. NW SE, Section 3-2-3w, drilling at 260 feet and No. 4, SW cor. NW SE, drilling at 470 feet; Iowa Oil & Refining Co. is rigging up rotary tools for No. 4 Watkins, SW cor. NE SE, Section 7-2-2w; Magnolia Petroleum Co.'s No. 2 Cox, SW cor. SE NE, Section 16-2-2w, is a rig; No. 3, NW cor. NE SE, is drilling at 115 feet; No. 1 Pollock, SW cor. SE, Section 14-1-3w, is a rig; Humble Oil & Refining Co.'s No. 6 Jordon, SW cor. SE SW, Section 18-1-3w, is drilling at 105 feet; No. 1 Lusk, SE cor. SW NE, Section 33-1-3w, is drilling at 187 feet.

TOPIC FOR TULSA MEETING OF A. P. I.

(Continued from Page 29)

It would mean, of course, the formation of a holding corporation or association for all the basic processes now commercially practicable. It would mean a working agreement between the refiners as to division of profits, and as to distribution of royalties based on the present processes, and the future improvements. It would in effect be the formation of a refinery trust of tremendous size and power. But unless the garret genius is to continue it must come.

And even if the Government would consent, there are the various units in the industry to be won over. Vast sums have already been spent in creating demands for products by certain trade names and to lead the public to believe that certain processes are the last word in refinery methods. Until some company is able to market its products at every cross road in the United States, it is obvious that the millions of car users will do as they do now, buy where it is most convenient without much regard to the name or specifications of the product. And the present methods, when analyzed, is really an attempt on the part of the industry to diversify specifications instead of to standardize them. With high compression engines coming, standardization of engine requirements is inevitable, and also standardization of oils and gasoline.

Besides, if the airplane is to be a commercial success, there must be developed a standardized airplane gasoline and the development of that product is something towards which the Government should surely lend its aid.

Requirements Are Plain

As the basic processes are few; as the controlling companies are few; as the requirements are rather plain, it would seem that it is not impossible to have the big companies meet to discuss their problems. Perhaps such a plan might be worked out by a committee of the American Petroleum Institute for its next meeting in Tulsa. And we might have a Petroleum Foundation, similar to the Chemical Foundation, which has done such important work in the dye and cellulose industry. If Secretary Hoover meant what he said to the engineers we can count on his support, and it would then be up to the industry to work out a plan that would be acceptable to the larger companies and to the Government.

Either the oil industry must make the fullest use of science in its future development, or it may expect science to develop a substitute for gasoline.

"The day is gone by when we can expect much consequential discovery or invention being made by the genius in the garret." What Secretary Hoover meant was the isolated worker in a small laboratory. That is what the petroleum industry has had, and that is all it will have until it pools its resources and provides the means for the larger investigations that other trades are giving. The duPonts control the due industry and all the by-products of coal tar; General Motors is dominant in the automobile business; the United States Steel Corp., we may say, is the steel business. There is no such dominant factor in the oil industry, for in spite of all claims to the contrary, the control of the Standard Group is largely a myth. The larger constituents in the industry may at least attempt to form a pool which will enable the petroleum industry to take advantage of the possibilities of a great central laboratory, in which its problems may be solved. The mechanics of the formation of such a pool might be difficult, but with the co-operation of the Government they should not be insurmountable.

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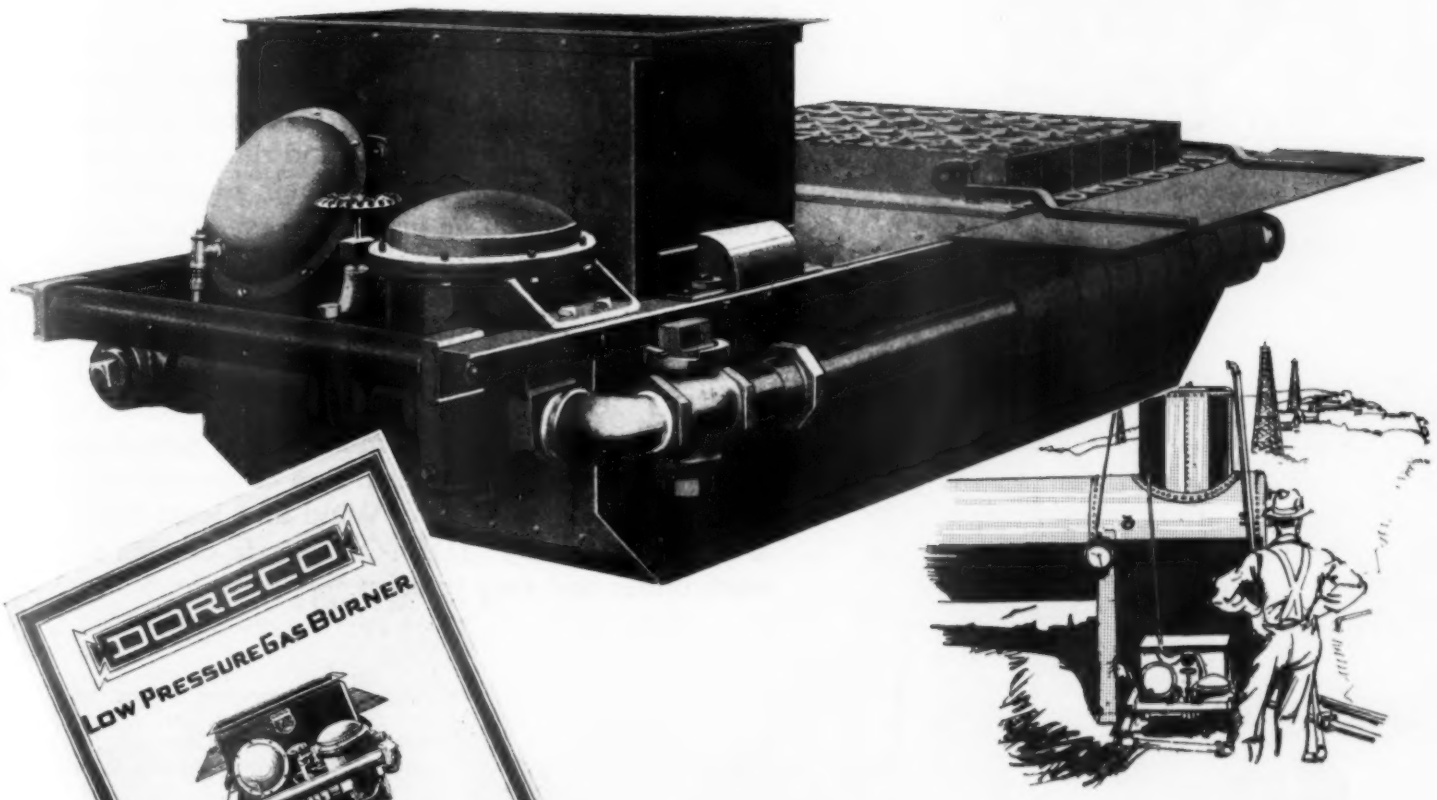

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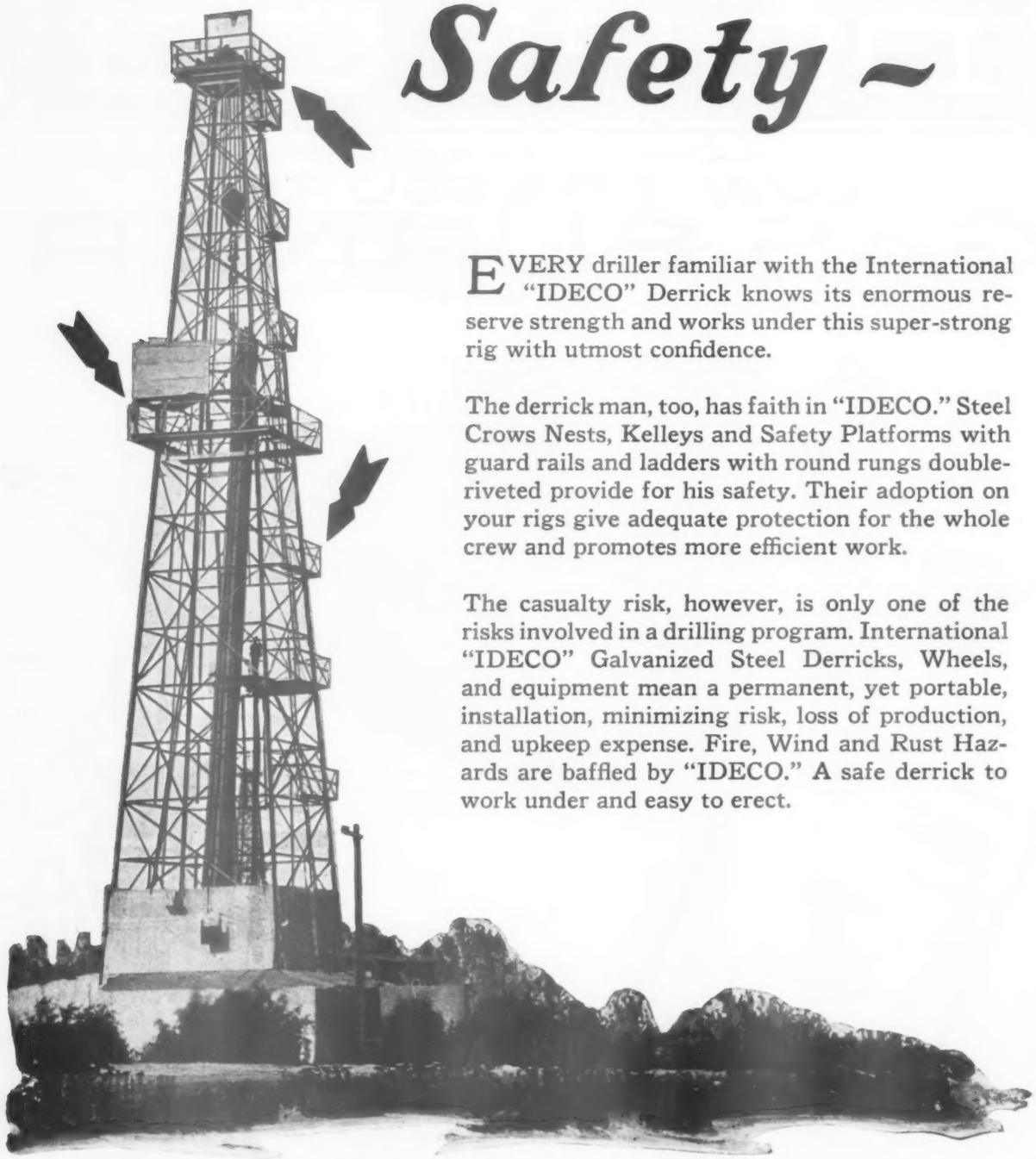

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GALVANIZING—There are no hidden cracks or exposed surfaces in an "IDECO" Derrick for rust and corrosion to attack and weaken. All derricks are galvanized *after* fabrication. "IDECO" galvanizing will not chip off.

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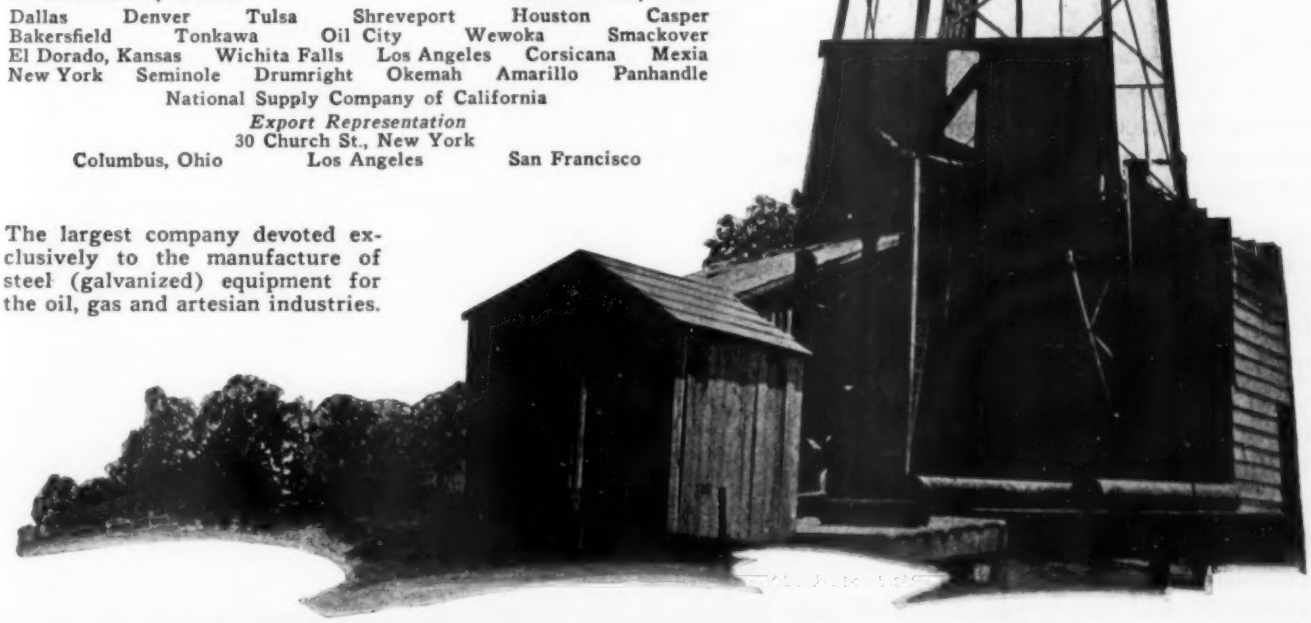

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Science used in the manufacture of Murray Tools imbues the product with strength to withstand the roughest usage for the longest period of time.

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Murray Tool & Supply COMPANY
TULSA OKLA.

RUNS TO STILLS CUT 11,020 BARRELS

(Continued from Page 30)

several Arkansas refineries, including the Kettle Creek Refining Co., but the circumstances regarding these increases have been explained previously in this story. Kettle Creek Refining Co. was reported running more than 5,000 bbls. on October 1. It was running between 3,500 and 3,900 bbls. the first part of September. The extra crude this month is all Smackover heavy. Two small plants, those of the Home Refining Co. at Camden and the Home Oil & Refining Co. at Hot Springs, were shut down October 1.

REFINERY OPERATIONS IN OKLAHOMA

(Plants which have been in operation during the past year.)

Name and location—	Daily Capacity	Runs October 1	Runs September
Anderson-Prichard, Cyril	1,500	1,200	1,500
Barnsdall Refineries, Inc., Barnsdall	5,000	4,000	5,000
Barnsdall Refineries, Inc., Okmulgee	6,000	2,000	3,000
Bell Oil & Gas Co., Grandfield	3,000	1,500	1,500
Bolene Refining Co., Enid	5,000	3,200	3,600
Cameron Refining Co., Ardmore	3,500	3,000	3,000
Canfield Refining Co., Yale	500	100	100
Champlin Refining Co., Enid	16,000	12,000	12,000
Continental Oil Co., Sapulpa	7,000	2,400	2,400
Cushing Refining & Gasoline Co., Blackwell	1,500	1,200	1,200
Cushing Refining & Gasoline Co., Cushing	2,500	1,200	1,100
Empire Refineries, Inc., Cushing	7,000	5,000	5,000
Empire Refineries, Inc., Okmulgee	3,000	3,000	3,000
Empire Refineries, Inc., Ponca City	6,500	6,000	6,000
Garber Refining Co. (Omar)	3,000	2,500	2,500
Gilmer Oil Co., Ringling	1,500	1,500	1,500
Globe Oil & Refining Co., Blackwell	5,000	4,700	4,500
Hewitt Refining Co., Hewitt	1,500	Shut down	Shut down
Illinois Oil Co., Cushing	3,000	1,000	1,000
Imperial Refining Co., Ardmore	6,000	3,500	3,300
Independent Oil & Gas Co. (Allied), Okmulgee	4,000	2,700	3,000
Interocean Refining Co. (Lorraine), Bristow	4,000	1,000	1,000
Lawton Refining Co., Lawton	1,000	Shut down	Shut down
Johnson Oil Refining Co., Cleveland	5,000	4,250	4,500
Marland Refining Co., Ponca City	25,000	22,000	22,000
Mecca Refining Co., Allen	1,500	100	100
Mid-Continent Petroleum Co. (Cosden), West Tulsa	35,000	22,500	22,500
*Miller Brothers 101 Ranch, Marland	100	50	50
†Oil State Refining Co., Enid	2,000	250	300
Oklahoma Asphalt Co. (Nyanza), Wilson	3,000	250	250
Peppers Gasoline Co., Covington	1,000	900	800
Pontotoc Pipe Line & Refining Co., Allen	800	300	300
Pierce Oil Corp., Sand Springs	10,000	6,750	7,500
Producers Oil Co., Bristow	1,500	800	800
Producers & Refiners Corp., West Tulsa	7,000	3,000	4,500
Pure Oil Co., Ardmore	6,500	2,000	2,000
Pure Oil Co., Cushing	5,000	Shut down	Shut down
Pure Oil Co., Muskogee (O. P. & R. Co.)	5,000	5,000	4,500
Riley Petroleum Co., Bristow	800	500	500
Rock Island Refining & Pipe Line Co., Duncan	2,500	1,850	1,700
Sayre Oil & Refining Co., Sayre	500	100	100
Shaffer Oil & Refining Co., Cushing	10,000	10,000	9,200
Sun Oil Co., Yale	3,000	2,400	2,500
Sinclair Refining Co., Muskogee	1,000	850	850
The Texas Company, West Tulsa	11,000	11,000	11,000
Texas Pacific Coal & Oil Co., Wynnewood	2,500	1,800	2,000
Tidal Refining Co., Drumright	10,000	6,000	9,000
Transcontinental Oil Co., Boynton	2,500	1,300	1,500
Transcontinental Oil Co., Bristow	6,000	4,500	4,000
Tonkawa Petroleum Co., Tonkawa	2,500	1,000	1,000
Western Oil Corp., Beckett	1,500	1,100	1,100
Yale Oil Corp., Yale	1,200	600	600
Total	263,000	173,850	180,350

*Average daily runs lower. †Operated by Bolene Refining Co.

REFINING OPERATIONS IN KANSAS

(Plants which have been in operation during the past year.)

Name and location—	Daily Capacity	Runs October 1	Runs September
Arkansas City Refining Co., Arkansas City	8,000	2,500	2,500
Barnsdall Refs., Inc. (Waite Phillips), Wichita	6,000	Rerun	4,000
Derby Oil & Refining Co., Wichita	5,000	3,500	2,000
El Dorado Refining Co., El Dorado	3,500	2,500	2,600
Golden Rule Refining Co., Wichita	1,000	1,000	1,000
Grant Oil Co., Augusta	1,500	Shut down	Shut down
Kanotex Refining Co., Arkansas City	9,000	6,300	6,300
Manhattan Oil Co. (K. C. Ref. Co.), Kansas City	6,000	5,900	5,300
Miller Petroleum Co., Humboldt	2,000	1,300	1,300
National Refining Co., Coffeyville	6,000	6,000	6,000
Peerless Oil Refining Co., Chanute	3,000	2,200	2,100
Roxana Petroleum Corp., Arkansas City	19,500	16,000	17,370
Russell County Pipe Line Co. (West Kans. Ref. Co.), Russell	2,500	Shut down	Shut down
Sinclair Refining Co., Coffeyville	6,500	6,000	6,000
Sinclair Refining Co., Argentine	8,000	5,300	7,000
Skelly Oil Co., El Dorado	14,000	9,500	12,000
Standard Oil Co. of Kansas, Neodesha	12,000	7,500	7,500
United Oil & Refining Co., Hutchinson	2,500	Shut down	Shut down
Vickers Petroleum Co., Potwin	3,500	1,850	2,550
White Eagle Oil & Refining Co., Augusta	6,500	5,500	6,500
West Missouri Group—			
Wilhoit Refining Co., Joplin	2,000	700	Rerun
Total	127,000	83,150	92,020

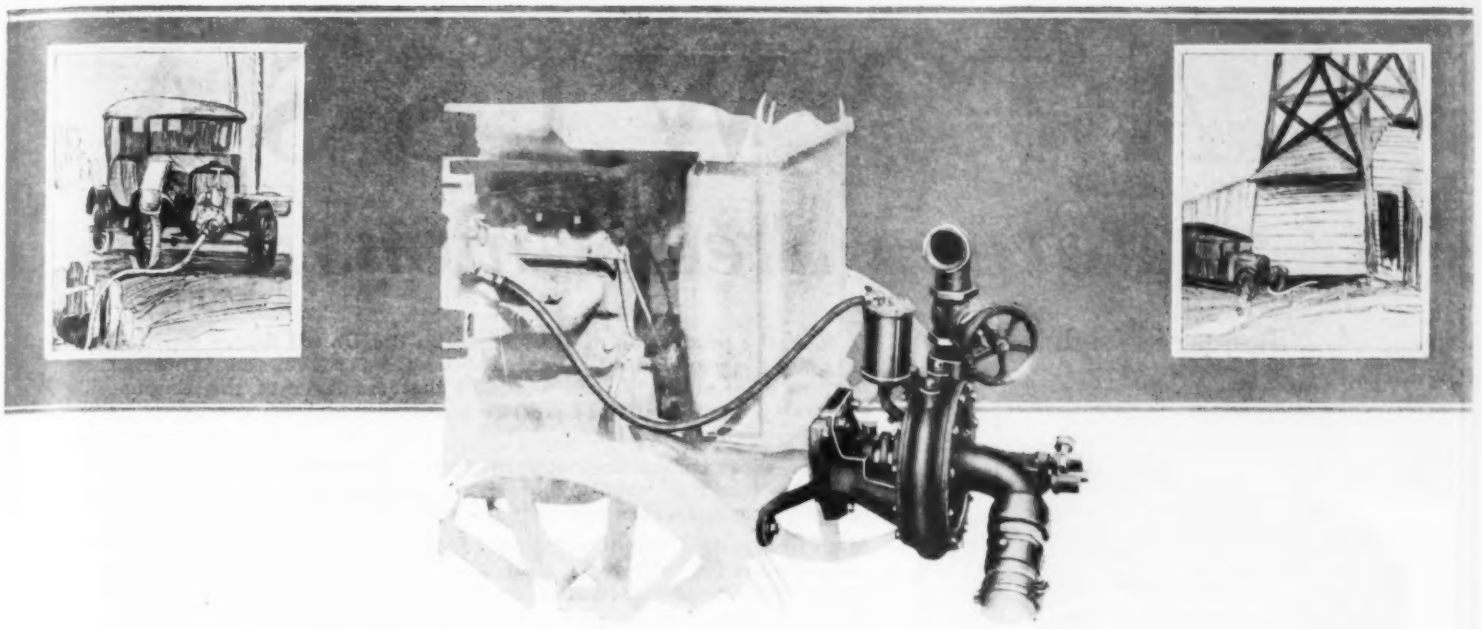
REFINING OPERATIONS IN NORTH CENTRAL TEXAS

(Plants which have been in operation during the past year.)

Name and location—	Daily Capacity	Runs October 1	Runs September
Amarillo Refining Co., Amarillo	5,000	3,000	3,000
American Refining Co., Wichita Falls	7,000	3,800	4,700
Buffalo Refining Co., Sherman	500	Shut down	Shut down
Col-Tex Refining Co., Colorado	7,500	6,000	6,500
Crystal Petroleum Co., Burkburnett	1,000	Shut down	Shut down
Dale Oil & Refining Co., Electra	3,000	2,200	2,200
Falls Refining Co., Wichita Falls	1,500	800	500
Gulf Refining Co., Fort Worth	15,000	6,400	6,400
Hagaman Refining Co., Tiffin	2,000	275	275
Humble Oil & Refining Co., Burkburnett	4,000	1,750	1,800
Iowa Park Producing & Refining Co., Iowa Park	2,500	1,600	1,500
Kent-Middleton Refining Co., Angus	3,000	2,200	1,900
Kent-Middleton Refining Co., Minerva	2,500	1,350	1,300
Magnolia Petroleum Co., Fort Worth	12,000	6,700	6,700
Magnolia Petroleum Co., Corsicana	10,000	2,700	2,700
Megargel Refining Co., Megargel	2,000	600	600
Miller Petroleum Co., Wichita Falls	3,000	1,300	1,300
Noble Oil & Gas Co., Burkburnett	5,000	2,800	3,000
Olney Oil & Refining Co., Olney	1,200	1,100	1,100
Oriental Refining Co., Dallas	6,000	Shut down	Shut down
Oriental Refining Co. (Trinity), Dallas	5,000	2,800	2,800
Oriental Petroleum Co., Wichita Falls	3,000	1,000	1,000
Panhandle Refining Co., Wichita Falls	4,000	2,250	2,300
Paris Refining Co., Paris	250	250	250
The Petroleum Corp., Electra	2,000	Shut down	Shut down
Primrose Refining Co., Wichita Falls	1,500	1,000	1,000
Producers Refining Co., Gainesville	5,000	4,000	4,000
Simms Oil Co. (Clayton), Dallas	4,500	3,900	4,200
Star Refining & Producing Co., Fort Worth	1,800	Shut down	Shut down
Tidal Western Refining Co., Burkburnett	3,000	2,500	2,500
The Texas Company, Dallas	15,000	9,700	9,700
Texas Pacific Coal & Oil Co., Fort Worth	6,000	2,300	2,300
Texhoma Oil & Refining Co., Wichita Falls	7,000	4,800	4,800
Transcontinental Oil Co., Fort Worth	5,000	4,500	3,500
Travis Refining Co., Burkburnett	750	350	350
Waggoner Refining Co., Electra	3,400	2,800	2,800
Western Oil Corp. (Sunshine), Wichita Falls	3,000	Shut down	Shut down
White Eagle Oil & Refining Co., Fort Worth	4,000	1,800	2,500
Wilson Brothers Refining Co., Wichita Falls	2,500	Shut down	Shut down
Total	170,400	88,525	89,025

*Operated by Magnolia Petroleum Co.

(Continued on Page 92)



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RUNS TO STILLS CUT 11,020 BARRELS

(Continued from Page 90)

REFINING OPERATIONS IN NORTH LOUISIANA

(Plants which have been in operation during the past year.)

Name and location—	Daily Capacity	Runs October 1	Runs September 1
Crystal Oil Ref. Corp. (Caddo Central), Shreveport	10,500	7,800	7,800
Great Southern Refining Co., Ardis	2,000	Shut down	Shut down
Louisiana Oil Refining Corp., Shreveport, Bossier	22,000	22,000	18,500
Shreveport Producing & Refining Co., Shreveport	5,500	4,700	5,000
*The Texas Company, Shreveport	7,000	5,600	5,700
Total	47,000	40,100	37,000

*Topping.

REFINING OPERATIONS IN ARKANSAS

(Plants which have been in operation during the past year.)

Name and location—	Daily Capacity	Runs October 1	Runs September 1
Cross Refining Co., Smackover	4,000	3,900	3,900
Home Refining Co., Camden	500	Shut down	75
Home Oil & Refining Co., Hot Springs	500	Shut down	50
Houston Oil Co., Camden	6,000	1,800	1,800
Kettle Creek Refining Co., Pearson	6,000	5,000	3,900
Lion Oil & Refining Co., El Dorado	10,000	7,800	7,500
Newark Refining Co., El Dorado	1,500	1,000	1,000
Ouachita Valley Refining Co., El Dorado	1,500	650	650
Root Refineries, El Dorado	3,000	3,000	2,475
E. M. Tulle, El Dorado	1,000	200	250
Total	32,000	23,350	21,600

CALIFORNIA OUTPUT AGAIN INCREASING

(Continued from Page 31)

sand encountered in the town lot section around 3,000 feet corresponding with the Bolsa zone. The lower horizon from which the largest production is coming at the present time occurs at approximately 4,000 feet. Developments are moving forward with great rapidity and, judging by their present status, it is believed that five or six additional deep zone producers will be on production within the next week or 10 days.

Practically every well drilling in the extension at the present time has the deep sand as its objective. Approximately 80 rigs are standing in the town lot section, the greater majority of which have already been spudded. A check made a few days ago revealed the fact that 45 drillers were rotating ahead between 3,000 and 4,000 feet. Unusually fast footage is being made and for this reason it is quite possible that the field will have passed its maximum production within the next 60 days. This, of course, depends upon whether the area now under development embraces the entire productive limits or whether it extends over into the adjoining section still restricted. It is practically a foregone conclusion that existing restrictions will be lifted if further drilling warrants, and in this event the high point will probably not be reached until some time later.

The California Petroleum developed an extension of its own several weeks ago by bringing in No. 1 Buck, located about a mile beyond production in the extreme northern part of the old field doing 450 bbls. daily and, while only a limited amount of drilling is expected to be done in this area during the next several months, one can not always look that far ahead. The company has quite a string of wells under way in the southwest extension and it is logical to assume that developments in that section will occupy the company's undivided attention. No. 2 Buck, located 300 feet north of No. 1 Buck in the northwest extension, was given a preliminary test this morning and it is producing at the rate of 300 bbls. daily.

Working in Two Directions

In order to remove any misunderstanding in regard to drilling operations in the Huntington Beach Field, it might be well to call attention to the fact that development work is progressing in two directions. There are at the present time two extensions being drilled up, one by the Standard and California Petroleum and the other by various operators. The former area is almost due north of the old field, while the latter, that section which is expected to boost the field production quite substantially, is located along the ocean front southwest of the old field. Only three or four wells are drilling in the northwest extension, as compared with about 65 in the southwest. When the California Petroleum brought in No. 1 Buck in the northwest extension a few months ago some doubt existed as to whether it was an extension well or a discovery in an entirely new area and, although it was located about a mile north of production, it has been generally regarded as an extension. This has just been confirmed as No. 2 Buck north of No. 1 required an additional 100 feet of hole, this indicating that the structure is plunging northward. As it looks at the present time, based on the meager information available, Huntington Beach should be good for an increase in production of between 10,000 and 15,000 bbls. daily between now and the close of the current year, the exact time depending upon future developments.

Situation at Seal Beach

Seal Beach is the unknown quantity, and, while there is nothing upon which to base any future estimates, except the discovery well, it would seem that the field should be doing around 5,000 or 10,000 bbls. by the end of the year. This of course depends almost entirely upon the amount of drilling undertaken and whether the operating companies negotiate any kind of a gentlemen's agreement to curtail drilling or restrict the penetration in the oil bearing formation, as has been done so wisely at Dominguez. The extent of the Seal Beach district is, of course, unknown and, while it is the general consensus of opinion that it will be rather small, this is by no means certain. All available data based on the logs of several wildcats indicates that it will be something like a mile long and probably quite narrow. Geologists are divided in their opinion as to whether it will extend northward into Alamitos Heights but the Pan American thinks enough of the possibility to drill a test in that area. In the meantime, the only other drilling to be done will be located on the large holdings of the Marland, Standard and Associated, all or part of which should be productive. It is believed that at least three and possibly six wells will be completed in this field before the close of 1926.

Dominguez

Dominguez, the last of the quartet of fields expected to show increases during the next 90 days may or may not pan out as expected. Practically no drilling of any consequence is being done at present and the only chance of this field registering an increase depends upon the results obtained through utilization of the so-called Marrietta process of pumping dry gas into the producing formation in order to stimulate production. The field output has shown an increase of about 2,000 bbls. a day in the past month during which time gas has been pumped into the oil sand under high pressure. Whether this district will be producing more oil at the close of the year than at present depends upon the reaction of the oil bearing formation and the policy of the operators engaged.

In summing up this brief survey one can not help but be impressed by the fact that production in California is still far in excess of normal requirements and this condition will result in a continuance of shipments to the Atlantic Seaboard, at least up until next summer. Whether these shipments will consist of crude oil, fuel oil, Diesel or refined oils depends upon conditions prevailing during the period in question. Although there has not

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In response to an urgent demand, the Santa Fe will establish on Nov. 14th, a NEW *daily* train de-Luxe between Chicago and California—The Chief—which will set a new standard in the transportation world.

It will cost more to ride The Chief because it will be finer and faster — something distinctively superior—like an exclusive hotel or club, on ribbons of steel, speeding through a scenic wonderland, in luxury, ease and supreme comfort.

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The Santa Fe also operates four other through trains to California every day on which no extra fare is charged. Remember Grand Canyon and the Indian-detour. (158)

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yet been any readjustment in the California crude oil schedule following the severe cuts made in gasoline prices, a few weeks ago, it would seem that something along this line might develop within the next 60 days, particularly in view of the fact that production east of the Rockies is also rather high. The situation is so complex at the present time, however, that it is simply a matter of conjecture one way or the other.

California refiners have been drawing on stocks during the past few months but it is believed that they will again be storing crude and refined oils beginning probably in October, unless intercoastal and export shipments are appreciably increased. Taken as a whole, the situation is decidedly unfavorable, although refiners will not experience any great difficulty as there appears to be ample storage facilities available. With respect to prospective shipments to Atlantic and Gulf Coast ports, it might be stated that there will be a surplus of California oils available for this movement if conditions are favorable. Whether these liftings will be crude oil or refined depends almost entirely upon the situation east of the Rockies. I am inclined to believe that both crude and refined oil shipments will continue during the winter months as it looks as though eastern markets can assimilate the California surplus to advantage particularly with respect to crude oil, Diesel and fuel oil.

OIL SHORTAGE PREDICTION PARALLELED IN COTTON

(Continued on Page 94)

petroleum industries. A few years ago cotton was woven into cotton fabrics. Then fashion insisted on silks—and so today cotton and wood pulp are combined and woven into the superior product of rayon, or artificial silk.

Likewise, a little while ago, the most important petroleum product was kerosene. Then industrial changes demanded less kerosene and more gasoline; and the genius of the industry promptly devised new processes to meet the new requirements.

Precisely as new fashions enabled the women to get more dresses per bale of cotton, so new mechanical methods have enabled the motor cars to get more miles per gallon of gas. But can anybody imagine law and regulation bringing such revolutions into the textile and petroleum industries? Nothing on earth except the untrammeled working of taste, inventiveness, ingenuity, and free economic forces could have made these things possible.

Not so many years ago there was worriment in some quarters lest coal might become exhausted. Today the coal industry frankly admits it is in a bad way, but attributes its misfortunes to the fact that too much coal has been found and is being dug! Here, again, comes in the factor of improved utilization. Steam and heating plants have been so far improved that they require vastly less coal. The rivers are harnessed, and hydro-electricity further narrows the demand. We have ceased to hear about the danger of exhausting our coal.

Or, The Case of Timber

Twenty years ago there was something like a panic over the alleged approach of a timber famine, though latterly we have heard less of it. But only the other day it was revived, with the statement that 15 years hence we would feel a definite shortage of lumber, and 25 years after that a lumber famine would be upon us. On the very same day it was given general publicity there came to my desk also a story of a movement in the lumber industry to raise several million dollars wherewith to educate the public to use more lumber and thus to overcome a lessening demand for it! Of course the point is that an increased use of cement, steel, and other materials has wrought changes in the economic position of lumber, precisely as invention, improvement and substitution have affected cotton, coal and petroleum.

The great difficulty with restrictive and regulatory statutes is their inelasticity, the impossibility of quickly adapting them to changing conditions. In recent years the history of the railroads and of most public utilities has afforded illumination of this observation. Rates and regulations imposed under one set of industrial and economic conditions were presently found, when those conditions had suddenly changed, to be grievously restrictive, injurious alike to the properties and to good service.

It seems especially justifiable to plead that an industry like petroleum that has been constantly compelled to reshape itself to new conditions arising out of multiplied inventions and increasing demands should not be subjected to any avoidable restrictions and dubious inhibitions.

SOUTHEASTERN OHIO PRODUCERS ORGANIZE

LOGAN, Ohio, Oct. 9.—More than 100 oil men attended a banquet at the Easterling Club here as guests of the oil division of the local chamber of commerce to organize the Southeastern Ohio Oil Producers Association. H. D. Atha was temporary chairman.

H. M. Whitcraft, representing the chamber of commerce, welcomed the oil men. The chief address was by Mr. Piper of Bradford, outlining activities and the benefits from the Northwestern Pennsylvania association, followed by remarks by O. C. Dunn, Marietta; Messrs. Stewart and Hufford of Bremen, J. P. Flynn of Sistersville, W. Va.; Mr. Green of the Buckeye Pipe Line Co. of Findlay; and R. J. Alexander, secretary of the Pennsylvania Grade Crude Oil Association.

A. D. Hufford of Bremen was elected president and a director; O. C. Dunn, Marietta, was elected vice president and director, and W. L. Franks of Logan was chosen as secretary and treasurer. Other directors named are: Warren Burrus and Edward Meldren, Marietta; H. E. Stewart and F. W. Douglass, Woodsfield; C. H. Bell, H. D. Atha and Harry Watson Logan.

One immediate object of the association is to learn definitely and if possible remove the underlying cause for the present differential in prices paid for West Virginia and Ohio crude oil of the Pennsylvania grade. The majority of those attending signed as members and a substantial initial fund was pledged. A similar meeting is scheduled for Marietta on October 22.

FIGHT DIFFERENTIAL ON PACIFIC GASOLINE

LOS ANGELES, Cal., Oct. 11.—Maintaining that 4-cent margin between tank wagon and service station prices of gasoline is absolutely necessary independent service station operators of California are preparing to fight the reduction of 1 cent in the differential which has been put into effect within the past three weeks by the major marketers.

Decided opposition to the reduction in the margin of profit from 4 to 3 cents was voiced at a special meeting of the Independent Service Station association of California last week at which delegates from all local branches were present.

A. E. Parish, president of the San Diego branch, declared that independent dealers in that district had refused to sell at reduced prices and were conducting a campaign to get the public to support them by paying an extra cent for gasoline. All speakers went on record as opposed to any attempt of dealers to meet competition by selling inferior gasolines at cut prices.

UNDERWENT OPERATION

G. G. Langan, Mid-Continent manager for the Hill Hubbel Co., is at St. John's Hospital, Tulsa, where he underwent a slight operation for throat trouble.

A tubing accident may cripple your well PERMANENTLY

Here is a point rarely touched on in our advertising, but it is nevertheless important:

ONCE A WELL HAS SUFFERED A SERIOUS SHUT-DOWN, IT IS UNUSUAL FOR THIS WELL TO COME BACK TO ITS FULL PRODUCTION AGAIN, AFTER IT IS AGAIN PUT ON THE BEAM.

That is, a well pumping 500 barrels a day and having a tubing accident which requires two to three weeks of fishing, may suffer a very serious depletion in production, and may, when again put on the beam, produce considerably less than 500 barrels.

This is just another strong reason why every pumping well should be safeguarded with a GUIBERSON Tubing Catcher. An accident may cost you not merely tubing, temporary loss of production, and fishing expense. It may *permanently deplete your production.*

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BETTER BE SAFE THAN SORRY

Unit Operationin New Pools Beneficial

Greater Economy in Production and Development and Aid in Stabilizing Market Conditions Claimed for Plan

By I. L. Dunn and James O. Lewis.*

By unit operation is meant the developing and operating of oil pools under one management so as to make possible the application of the best principles of business, engineering, and science. The proposal is to do away with the division of ownership of the oil underground based upon property lines at the surface and to recognize the fact that a pool of oil is a natural and indivisable unit that should be operated as such for the common good. But as unit operation unsets the customs of the industry and affects public policy, it is encumbent upon those of us who advocate it to show beyond reasonable doubt that unit operation will result in worthwhile gains to both the property owners and to the public.

Natural conditions vary widely in the different oil fields, and the exact methods of unit development and operation must be varied accordingly. Also the economic value of unit operation will vary, being exceedingly large under some conditions and much less under others. Present methods of the industry are based upon competitive recovery, and it therefore is necessary for the industry to develop by research and experience new concepts and methods for operating under non-competitive conditions.

Oil and Gas Move in Sand

The commonest type of oil pool is the one sand pool. The size may be from a few acres to several square miles. The oil is saturated with gas dissolved under pressure and the oil area is surrounded by water. When the pressure has been taken off the pool the production declines and leaves the larger proportion of the oil to be recovered by artificial means. Sometimes the surrounding water encroaches and flushes much of the oil out of the sand, but most commonly such encroachment is negligible. Less commonly there will be an excess of gas not held in solution, which will be found as an area of free gas overlying the oil or occupying the higher parts of the structure. Typical of such pools are Cromwell and Teapot Dome. A third type of pool has several sands superimposed one over the other, each of which is to be considered as a separate pool. These sands may contain free gas only, or free gas and oil with dissolved gas. Typical of such a pool was Cushing with all its complications of operation and conservation.

The main thing with respect to an oil pool is that the gas, oil and water moves with considerable freedom through each productive measure, and that the existence of the property lines established at the surface have nothing whatever to do with the distribution of the oil or gas, or with its movements underground.

Unit Operation of Pools

Many of the advantages of unit operation are so obvious that they will suggest themselves at once to every oil man. These include the savings in organization, management, finance, purchase, and distribution of supplies, provision for roads, water supply or disposal systems, oil and gas lines, tankage, power plants, gasoline plants, and other savings to be made by large non-competitive operation over the duplication of 20 or even 50 or more individual operations in the same pool. By controlling a whole pool, if it be a large one, plans can be laid far ahead for the systematic development of the pool upon the most sound and economic lines. At present our oil fields are characterized by crude and makeshift engineering necessitated by rapidity of competitive development and the rapidity of declining production. Haste, regardless of expense, is the watchword in high pressure pools. With this competition removed, it would be possible to apply far better and more economical principles in development and operation. Without the control of an unusually large area in the Salt Creek Field, the Midwest Refining Co., would not have been able to establish its large central electrical plant.

The savings in locations is also an economy often stressed. The writers believe that while this saving has sometimes been exaggerated, yet it is an important source of needless expense. An often greater unavoidable expense has been the drilling of wells in parts of the pool where they are not needed and are in fact detrimental to the pool. This applies particularly to pools where there is free gas as at Cromwell. The drilling of many wells there actually decreased the recoverable oil from this pool. Under non-competitive conditions such unnecessary and wasteful wells could be avoided and for other fields the spacing and positioning of the wells that will give the greatest profits can be worked out and applied for the natural and economic conditions in each pool. The drilling of dry holes or unprofitable edge wells can also be reduced. The specter of town lot drilling or of starting many locations simultaneously in a part of a new pool with the prospect that all may be dry or unprofitable could be dispensed with in unit operation.

Greatest Natural Recovery

For greatest natural recovery the wells should be spaced close together and the field drilled up as rapidly as possible. But this entails excessive financial charges, drilling costs, tankage, and other expenses as well as often disastrous effects on the market. Greatest natural recovery under present methods of production is opposed to greatest economy in development and production. Under non-competitive conditions it would often be possible to space the wells farther apart and drill them according to a program that would entail less expense and unfavorable effect upon the market, relying upon artificial pressure to make up for the loss in recovery occasioned by the wide spacing.

In producing the oil, similar savings can be made as in the development of the fields. The carefully considered program of development made possible by unit operation can provide also for the best condition for long lived and economic production. The same advantages in organization, finance, supplies, etc. will also apply; moreover, changes in the methods of producing oil that will become possible under unit operation promise to make radical changes in the cost of production. The additional profits that could be gained from utilization or sale of gas now wasted would lessen the unit expense for producing the oil. It is also well known that the smaller the production of a well the greater the lifting cost per barrel; therefore, if methods of maintaining or increasing recovery can be applied that will not materially increase the total operating cost for the pool, the unit lifting expense will be reduced. The average lifting expense in 1923 for several large groups of properties averaging 1 bbl. per well day was $1.40; whereas, for wells producing 10 bbls. per day, the average lifting cost was 50 cents. Administrative and other expenses could likewise be reduced.

Increased Production

Important as are these savings in development and operation, the writers believe that they will be overshadowed by the increases in both natural and artificial production made possible by such unit operation. There are a number of theories as to how the natural forces in the sand can best be taken advantage of to increase recovery. What will finally prove to be the best method for each condition cannot now be said, as this must be determined from further research and experience, but there is enough evidence to indicate clearly to every thinking oil man that usually the increase of natural recovery will be marked and often will completely change the outlook of a pool. In an old pool, best recovery cannot be obtained unless those applying artificial pressure, especially if it be air or gas, work together, and artificial recovery can be applied early in the life of a pool if it is developed as a unit.

Under competitive conditions, the object is both to get to the sand as soon as possible and to keep the daily production rate as high as possible. These conditions are seldom favorable for greatest ultimate recovery. It has been shown that by proper operation of a well the quantity of gas produced with each barrel of oil can be often reduced, which means that the total recovery will thereby be increased. In a flowing well, control is usually exercised by back pressure, but back pressure can be used only to a limited extent under competitive conditions. In

(Continued on Page 137)

BENEFITS CLAIMED FOR UNIT PLAN OF OPERATION

A pool of oil is a natural unit no matter how large, and operations cannot be conducted independently without increasing costs and reducing both recovery and profits.

Important savings in development and production costs can be made by reason of operating on a larger scale without the necessity of undue haste and with the opportunity for carefully working out a development program in advance.

Important savings can be made in the number of wells drilled, which can also be more effectively located to get the maximum production and to minimize the waste of gas and oil.

Unit development would also permit the use of improved production methods most of which rely upon the control of pressure in the sand, including back pressure, stop-cocking, gas or air-lifts, holding in of gassy wells.

Under unit development artificial pressure can be applied earlier, and possibly the wells can be flowed throughout the life of the field. Production can be sustained over a longer period and can be controlled more in accordance with the price of oil, which would minimize the disastrous fluctuations in oil prices.

Profits would be increased and, under conditions as at Cromwell, should be several times those realizable under competitive operation.

Unit development would be in the public interest, as it will increase and prolong supply, will create more capital, and reduce the final cost of products to the consumer.

*Delivered before joint meeting A. I. M. and M. E. and Mid-Continent Oil and Gas Association, Tulsa, Okla., October 11.

USE OF GAS LIFT PRINCIPLE IN THE MID-CONTINENT FIELD

By S. F. Shaw*

The Roxana Petroleum Corp., appreciating the advantages to be obtained by a scientific application of the principles of the air lift to oil wells, recently engaged, for a limited time, the services of the writer to work out some of the problems involved, at Braman, Garber and Tonkawa in Oklahoma and at Oxford in Kansas.

The results were, as a whole, quite satisfactory, in so far as it was possible to carry out these ideas in a limited time. A total of 14 wells produced 6,590 bbls. before installation of the air lift and 13,847 bbls. afterward, thus giving an increase of 110 per cent. The range of increase was from 5 to about 400 per cent where conditions were favorable for the use of the air lift, indicating that in many cases wells would yield a greater production of oil if the fluid were removed as rapidly as it enters the well. Most of this increase was made on wells already provided with the usual type of gas lift.

In bringing about this change in operating conditions it was arranged to remove all back pressures wherever possible. All pockets where air or gas could accumulate, and all horizontal flows were eliminated in the flow line, the gas trap being moved close to the well and placed at such an elevation that a gravity line would carry the liquid from the trap to the receiving tank. The flow column, or eductor, is of such design at the lower end as will reduce to a minimum the slippage loss that usually takes place in the lower section of the eductor pipe, and in the upper section is so designed as to reduce the friction loss in that part to an acceptable minimum. Finally, and not the least important, the wells are operated at the rate that gives the highest acceptable efficiency for the particular set of conditions involved.

Method of Calculating

Let it be assumed that in a well 3,000 feet deep, when producing 2,000 bbls. of oil a day of 35 degrees Baume (0.85 sp. gr.), the liquid column stands high enough to give a pressure of 300 lbs. at the lower end of the casing. A liquid column of 35 degrees Baume (0.85 sp. gr.) would represent 691 feet of water, or 691 ÷ 0.85 = 810 feet of oil. The lift would then be 3,000 feet less 810 feet, or 2,190 feet.

Let us suppose that the conditions in the well have permitted a design that involved the following losses: Entrance losses, 5 per cent; slippage losses, 15 per cent; friction losses, 40 per cent; discharge losses, 10 per cent; or total losses, 70 per cent. The efficiency that

(Continued on Page 133)

*General manager, Cia. Minera Nazareno y Catasillas. Before Petroleum Division, A. I. M. & M. E., Tulsa, Okla.

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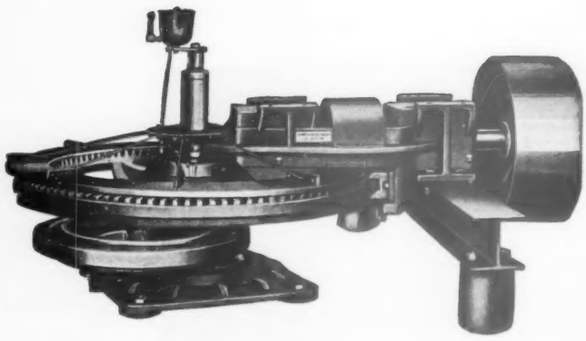

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MICHIGAN FIELDS

(Continued from Page 66)

Rabe farm; No. 1 Scherzer farm and Nos. 3 and 4 Schoenteit farm, all in Section 11, Saginaw Township. The Fordney Petroleum Co.'s No. 1, on the property near Jackson Street, in Carrollton, about 1,000 feet northeast of the Ohio Oil Co.'s good producer on the Mershon-Eddy-Parker property, may without bad luck reach the pay sand near the close of the week.

The Kipp Oil Co., a new concern for the field, has started a well near the corner of Harrison and Madison Streets, Carrollton. The Wayco Producing Co. is starting a well on the F. M. Hansen property on the Hermansau Road. Matthew Heppler and others are expected to reach sand within a few days at No. 1 on the Mrs. C. Heppler property, on Shattuck Road, west of Hermansau Road. Another well nearing pay sand is W. G. Berghorn and others on the Winter farm, Section 12, Carrollton Township.

Superior Oil Co. is starting a well on the Ben Wall property near Hermansau Road and Pere Marquette Railroad. Saval Development Co. staked a location for a well on the George Nentwig property, at Weiss and Eddy Streets. Great Lakes Petroleum Co.'s well, on the Fred Tomforde property, near Hermansau and Harrison Streets, struck top of Marshall formation at 605 feet. Delay in getting casing, held up operations on the well of S. M. Bacon and others on the Bouchard property, on Maple Street, Carrollton. The well has reached a depth of 1,400 feet.

Breaking of a sand line pulley on the drilling well of the Wanigas Oil Corp., on the Kundinger property, on the west side of the Webber Road and southeast of Saginaw, in Buena Vista Township, has delayed operations at a depth of 1,780 feet.

No. 4 well of the Bliss Petroleum Co., on the Casper Ulrich farm, Section 14, Saginaw Township, struck top of Marshall sand at 605 feet, and at 615 feet a string of 8-inch was put in on account of caving.

The Ohio Oil Co. is starting its No. 2 on the Mershon-Eddy-Parker property in Carrollton Township, about 400 feet northeast of No. 1, same property. Bliss Petroleum Co. made a location for No. 1 on the Charles Oehring property on Madison Street, Carrollton.

Leases were taken on 500 acres in Saginaw County, by the Union Development Co., composed of Mrs. Dora Patterson Finley and Mrs. Ella M. Parker, Oklahoma City, Okla., Ray Holbrook, Seattle, Wash., geologist, and J. A. Marx.

The Sun Oil Co. filed leases on 10 farms consisting of 610 acres in Blumfield Township, Saginaw County. A. H. Graves, trustee, landed two leases with a total acreage of 100 acres in St. Charles Township. Passolt and Barton secured a 6-acre lease of John and Thomas Yuill, in the city of Saginaw, adjacent to Brewster Street. Six leases on small parcels of land in the city of Saginaw and Carrollton Township, were taken by Clarence W. Beeker.

The Vorhees test, on the Mrs. Jane Marshall property, Section 16, Saginaw Township, and about 2 miles west of the discovery well of the field, is nearing pay sand.

Port Huron Well

Reports are that a well drilled near Port Huron, in St. Clair County, and shot by Herbert L. McMillen, of the Independent Torpedo Co., was showing around 3 bbls. at a depth of 681 feet.

CENTRAL WEST FIELDS

(Continued from Page 65)

of 15 bbls. Pierce Cavanaugh's test on the Allison Brothers farm, Section 26, same township, is reported good for 15 bbls. in a sand between 1,050 and 1,100 feet deep. Hart Brothers are reported to have drilled a dry hole in a test on the L. L. Miller farm, in Washington Township.

A well showing some gas is reported north of Shelbyville, on the Enos Porter farm, and the Pendleton Natural Gas Co. has a gas well at a depth of 900 feet on the Keesling farm, to the northwest of Pendleton, in Shelby County.

Report by Counties

An interesting article of Indiana developments, compiled by T. M. Kingsbury, State Gas Supervisor, Department of Conservation, Division of Geology, of Indiana, by counties, are as follows:

Adams County—Activities continue in southeastern part of the county. No. 1 on the Elliott farm east of Berne pumped off at 50 bbls. a day and is believed to be as good as No. 2 on the adjoining Niblick farm, completed a few weeks ago. Harmon & Watts are drilling another well on the Niblick farm. Schulte and Haney drilled No. 7 Schulte or old Eugene Runyon farm in Blue Creek Township, which was good for 20 bbls. Five of the other six wells are being pumped and the sixth is a gas well. Harmon and Watts drilled in one of the best wells in this field on the Smitley farm. Oil was reached at 1,120 feet, 45 feet in Trenton. G. S. Lacknett drilled No. 2 on the H. L. Lipe farm which produced 15 bbls. a day. A total of 22 wells have been brought in in Adams County this year and many more are being drilled.

Benton County—Plans are being made to drill a test well near Kentland. Illinois men are interested in drilling this well.

Blackford County—Ed Clark has leased about 6,000 acres in Jackson Township and plans to drill to the lower pay sands in the Trenton formation, in areas that once produced near the top of the Trenton. Production in parts of the county, especially in Harrison Township, south of Warren, has shown increases in recent months. N. E. Masters drilled a small well on the A. F. Gerard farm, in this township.

Clay County — Two groups of leases have recently been taken in this county and test wells are expected to be drilled soon. Walter Ely, of the Clay Realty Co., has leased 10,000 acres in Jackson Township, and E. D. Fagin has filed 19 leases taken in Perry Township.

Daviess County—Drilling on the John Allison farm, Veale Township, Pierce Cavanaugh brought in an oil well in new territory, 1½ miles southeast of the Gaithers well. Four pay sands were encountered but oil was obtained from the last 1,050 to 1,100 feet. Mr. Cavanaugh is drilling on the Ziba Graham farm. Near this farm on the Henry Backus lease a dry hole was completed. Thorn Oil & Gas Co. has completed a 20-bbl. well on the Wonders farm. Hartman and Sargent holds leases between this well and the Gaither wells. It is reported there are 40 producing wells in this county, Hart Brothers drilled a dry hole on the L. L. Miller farm, Washington Township.

Greene County — Bussard & Rogers have leased 2,000 acres in northwestern Jefferson Township, near Worthington, and plan to drill soon.

Gibson County

Gibson County—Bell Brothers, drilling on the George Conrad farm west of Somerville, brought in a gas well which has an open flow of more than 600,000 feet daily. The location was made by H. L. Barnett, who worked out structure on coal. Gas was found at 1,048 feet. No. 2 is being drilled two locations west on the S. McCullough farm. Bell Brothers and the Ohio Oil Co. have recently taken extensive leases in Barton Township. A well is being drilled on the John Enlow farm.

Huntington County—A revival of old-time activity is shown by the recent exchange of leases in Salamonie Township. Thirty years ago there were a large number of producing wells in the vicinity of Warren. The March Petroleum Co. completed No. 28 on the Calvin Perdue farm, Salamonie Township, which made 20 bbls. in seven hours. This company is drilling No. 12 on the J. L. Priddy farm.

Jackson County—Plans are being made by residents of Seymour to drill for oil in the county following a geological study.

Jay County—Twelve oil wells in the

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Hotmire Pool, owned by N. E. Masters, are being drilled deeper. The first well drilled deeper and shot increased production 20 bbls. The Bisel Oil Co. recently completed a well in this pool at 52 feet in the Trenton. It had a good flow of gas, but little oil. It will drill a second well soon. The Waterloo Oil & Gas Co. has leased 700 acres in this county.

Johnson County—Drilling is being continued by the Universal Development Co. on the second test for oil northwest of Franklin. The first well, 1,994 feet deep, found showings of oil below Trenton.

Knox County—The Western Gulf Co. is drilling deeper in its well on the Joseph Keyser farm in Posey Township, the Murphy Oil Co. drilled in a 5 bbl. well in Harrison Township, Monroe City Field. A well completed on the George Ryan farm, Section S-1-11, was dry at 1,558 feet.

Lagrange County—J. Hunt and others are planning to drill another well. The last well drilled was near Howe.

Madison County—The Pendleton Gas Co. finished a good gas well on the Joseph Keesling farm, northwest of Pendleton at a depth of 906 feet, 10 feet in Trenton. The company is now drilling on the Willie Little farm.

Monroe County—The Saddle Creek Oil Co. is preparing to drill a second test for oil in Salt Creek Township. Its first well on the Morgan farm, Polk Township, produced some oil. The second well will be east of the first location. The City of Bloomington drilling for water in the park encountered gas and salt water at 170 feet.

Pike County

Pike County — A 100-bbl. well was drilled on the Olive Branch Church property, Logan Township, by the Reynolds Oil Co. This company is drilling on the Mandy Miley farm. Perry Andrews completed a 40-bbl. well in the western part of the county (on the Loveless farm) in the new Oatsville Field. This is the fifth producing well Mr. Andrews has drilled this year, production coming from the Oakland City sand at 1,410 feet. The Skidmore Oil Co. is drilling No. 3 on the Walter Miley farm, and the Wiser Oil Co. is drilling on the Ernest Wilson farm in the same locality. Their last well on the James S. Wilson farm made 75 bbls. a day. A well is being drilled on the Lida Martin lease west of Rogers. Davis, Miller & Whitlock drilled a 40-bbl. well in No. 2 on the James Wilson farm, Oatsville Field. Moulton & Noble have leased 6,045 acres east of Petersburg. John D. Morrisey drilled in a 35-bbl. well on the William Miley farm, Logan Township, at 1,390 feet, and has started another well on the same lease. On the Madison-Clay Township line west of Petersburg, Bruce Bement completed a 25-bbl. well on the Charles McAtee farm. The Murphy Oil Co. got a dry hole on the Stewart Brothers lease west of the the McAtee farm. The Loveless well south of the Stewart farm came in at 15-bbl. The Best Oil Co. will begin operations in Logan Township soon.

Shelby County—Work on the well east of Fairland, Brandywine Township, on the Elmer Vernon farm, has passed through the Trenton into water. It may be plugged back to oil showings and shot. George Meltzor, drilling for Enos Porter, on his farm north of Shelbyville, brought in a gas well.

Sullivan County—The Ohio Oil Co.'s well on the Merrill farm is down 1,050 feet but work has been held up for more than two weeks on a fishing job. This company drilled in a small producer on the Harris farm in Section 1-8-10 in Turman Township. The Home Gas Co. drilled in a good gas well on the Bledsoe farm, Section 28-7-10, in Gill Township.

Vandenburg County — The Evandiana Co. plans to drill another well north of Evansville. Its first well on the Detrington farm was dry. It is reported the Pure Oil Co. has secured 5,000 acres in leases in this county.

Vigo County—E. D. Fagin and others are still at work on their test in Riley Township, northeast of the old Riley Pool. Mr. Fagin has taken 10 oil leases east of this pool. H. H. Adkins, Sullivan, is contractor.

Wabash County—A. M. Sentz is leasing land in this county and it is reported will drill soon.

Wells County — N. E. Masters has leased two farms, the Elmer Tewksbury farm in Chester Township and the S. T. Saver farm in Nottingham Township. A company of Bluffton men completed a dry hole on the Harris farm, Nottingham Township.

Illinois

The second test to be made by Miller, Lengelson and others in Lick Prairie Township, Wabash County, Illinois, being No. 1 in the northeast corner of the Charles S. Groff farm, in the southeast quarter of the northwest quarter of Section 31, is reported at a depth of 1,525 feet, and the outlook is said to be encouraging. An unusual coal find has been made in this well, the log reveals. At a depth of 1,375 feet the drill entered a vein of hard coal of exceptionally fine quality. The vein proved to be 7 feet in thickness. So far as known this is the first time a vein of hard coal has been found in this territory.

Activities in the Allendale Field of Wabash County, during the past several days have been confined principally to locating new wells, drilling those already under way and several fishing jobs, only one new well having been drilled in, the Adams Corner Oil Co.'s No. 9 on the Mack Madden farm, Section 7, which is a light pumper estimated at from 15 to 20 bbls. Art Smith is drilling a well on the Edward Wright farm in Section 13, Wabash Township, a short distance south of Allendale and an offset to the Joe Keyser lease to the west, where Joe Young and others have secured some excellent producers. Joe S. Young, Jr., and others are moving a rig to the Laura Morgan 66 acres, Section 32, north of the mouth of Raccoon Creek, one of the most northerly locations in the Allendale Field. Miller & Lengelson, of Mt. Carmel, are drilling a well on the Walter Parkinson farm, same section, and if it proves a commercial producer, there will be much drilling in that section along the Wabash River this fall and winter. Ellison and others are drilling No. 5 on the Collison heirs farm, Section 13. Mayhugh and others are drilling No. 10 Kogan heirs farm, Section 2.

Lawrence County

The Ohio Oil Co. brought in a nice well in its No. 7 on the Ellen Lutz farm, Section 21, Dennison Township, Lawrence County, located in woods east of the gravel highway and across from the wells brought in by Snowden & McSweeney Co. The Lutz well is reported at 75 bbls. initial production from the Buchanan sand at 1,365 feet. Some of the wells on this lease have been sent down to a depth around 2,000 feet. A. Bruner and others' No. 11, in the southwest corner of the W. H. Dunning farm, Section 36, is a 15-bbl. pumper at 1,648 feet.

The deep test well of the Ohio Oil Co., being No. 23 on the J. R. Middaugh farm, Section 32, Bridgeport Township, Lawrence County, is reported at a depth of 3,600 feet and still in the formation which it has been drilling for some time, supposedly, the Trenton Rock. Operators are sanguine that something good lies below this lime and hope to be able to pierce it soon. In Lawrence Township, Joseph E. Griggs and others abandoned No. 11 on the T. H. and J. J. Seed farm, Section 10.

Crawford County

The W. C. Kennedy Co. drilled a well in the southeast corner of the Asbury Pope farm, in the northeast quarter of Section 1, Martin Township, Crawford County, getting a 3-bbl. pumper at the shallow depth of 390 feet, in what is supposed to be the Casey sand. Abbott and others' No. 3 well, near the northwest corner of the L. M. Highsmith farm, Section 12, pumped 2 bbls. at 970 feet. Frost Oil Co.'s No. 5 near the southwest corner of the A. W. Mann farm, Section 12, pumped 12 bbls. at 972 feet.

In Honey Creek Township, the Ohio Oil Co.'s No. 12 well 200 feet from the south line and 1,000 from the east line of

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Weight, pounds	20	25	30	25	30	45	50	40	45	50	30

Size Pipe for, in.	6⅝	6⅝	8⅛	8¼	10	10	12½	12½	15½	15½	20
Length, in.	14	16	14	16	14	16	14	16	14	16	16
Weight, pounds	30	35	60	65	80	85	125	135	160	170	275

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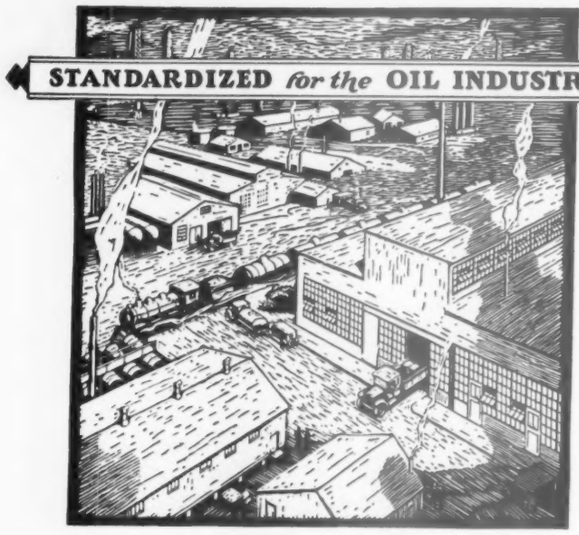

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the J. D. Ravelle farm, Section 31, pumped 4 bbls. at 940 feet.

In Martinsville Township, Clark Coun

In Martinsville Township, in Clark County, H. C. Ferriman and others' No. 3 on the W. D. Stalter farm, Section 31, produced 35 bbls. the first 24 hours from a depth of 1,601 feet, in what is known as the Niagara Lime.

In western Illinois, Waterloo Township, Monroe County, the East St. Louis Drilling Co. abandoned Nos. 1, 2, 3, 4 and 5 C. Wismath farm, in the southeast quarter of Section 23, and the Tokay Oil & Gas Co. did the same with No. 1 on the Charles Rueck 105 acres, in the southwest quarter of Section 11.

Central Ohio

Twenty-one new wells are reported completed in the Central Ohio Field since the last report, while in new work under way 14 new wells are drilling and locations have been staked for 16 more wells, which means that the fall months will naturally be active. Of the number of completions 4 are oil wells, with a combined initial production of 76 bbls., 5 are dry holes and 12 are gas wells.

The finding of a 20-bbl. producer by the Gordon Oil Co. in a second venture on the Wesley M. Colburn farm, Section 7, Knox Township, Vinton County, should attract some attention from the trade, as this county has been sadly overlooked for the past few years.

Activity keeps up in the Cleveland Field of Dover Township, Cuyahoga County. The Wiser Oil Co.'s No. 1, in the northwest corner of the M. Souleck, Lot 28, and the Cifranio lease well, look good for gassers. Dempsey Brothers drilled a dry hole in a test in the northwest corner of the H. F. Eyring 2 acres, Lot 18. Ohio Pipe & Supply Co. is drilling No. 1 on the G. W. Evenden 1-acre tract, Lot 18, and Arthur & Simpson are drilling No. 1 in the southeast corner of the J. J. Sayles 35 acres, Lot 17.

A light gas well was drilled by Cassingham & Bell Brothers at No. 17 in the northwest corner of the Cassingham 319 acres, Lot 5, Newcastle Township, Coshocton County. The Logan Gas Co. made a location for a test in the southwest corner of the H. E. and R. Babcock 190 acres, in Perry Township, same county.

The Logan Gas Co. made a location for a test well in the northwest corner of the J. Rickey farm, Section 30, Lee Township, Athens County. Sharon Oil & Gas Co. is drilling a test in the southeast corner of the J. C. Hewitt 32 acres, Lot 23, Waterloo Township.

In Carthage Township, Athens County, the Logan Gas Co. has an average gas well at a test in the northwest corner of the B. W. Barnhill 79 acres, Lot 25, and a nice gas well at No. 3 in the southwest corner of the W. O. and Mary Stout 54 acres, Lot 2, from the Keener sand. Same company made a location for a test in the southeast corner of the W. M. Winters 87 acres, Lot 16. E. A. Sweeney and others drilled in a second well on the Daniel Ackerley 27 acres, Lot 16, for a very fair gas producer from the Keener sand. Cooper and others are drilling No. 3 on the G. D. Swartz 46 acres, and the Colmer Oil & Gas Co. made a location for a test in the northwest corner of the Wilbur Colmer 35 acres, Lot 25.

In Holmes County, Richland Township, the East Ohio Gas Co. set a stake for a test in the southwest corner of the John F. Roby 97 acres, Lot 14. In Kilbuck Township, the same company drilled a dry hole at a test in the southeast corner of the W. H. Mohr 72 acres, Lot 13, while the Ohio Fuel Gas Co. landed an excellent gas well at a test in the southwest corner of the C. P. Allison 40 acres, Lot 12. Logan Gas Co. is drilling a test on the E. E. Troyer 48 acres, Lot 5, Paint Township, same county.

In Monroe Township, Holmes County, the Arkansas Fuel Oil Co.'s No. 3, in the northeast corner of the William Miller 154 acres, Lot 11, is reported good for 30 bbls. Empire Gas & Fuel Co. staked locations for Nos. 2 and 3 on the George W. Hanna 44 acres, Lot 6, and the East Ohio Gas Co. located No. 3 on the W. H. Geib 135 acres, Lot 7. In Hardy Township, the East Ohio Gas Co. made a location for a test in the northwest corner of the Hugh McCullough 58 acres, Lot 18, and the Empire Gas & Fuel Co. is drilling No. 1 in the northeast corner of the L. and W. G. Bilderbach 45 acres, Lot 7.

In Congress Township, Wayne County, the Empire Gas & Fuel Co. is drilling No. 3 in the northeast corner of the Ora Kenney 74 acres, Section 36. The East Ohio Gas Co. set a stake for No. 3 on the C. W. and L. B. Frick farm, Section 28, Milton Township. In Plain Township, the same company has a duster at No. 5 in the northeast corner of the J. G. Yocum 162 acres, Section 35.

In Penfield Township, Lorain County, the Wiser Oil Co. made a location for a test in the southeast corner of the Elmer Bowand 56 acres, in Lot 57.

In Chatham Township, Medina County, the Ohio Fuel Supply Co.'s second test, 1,200 feet from the north line and 450 feet from the west line of the L. A. Severcool farm, Lot 4, Section 16, is reported good for 25 bbls. from a total depth of 3,600 feet. The E. R. Edson Son Co.'s No. 26 Carl G. Packard farm, Lot 14, is good for 1 bbl. at 375 feet.

Logan Gas Co. drilled a light gas well in No. 9 well, 1,500 feet from the south line and 660 feet from the east line of the Leland R. Seeley farm, Lot 49, Litchfield Township, Medina County. Same company is drilling a test in the northeast corner of the L. Hance 45 acres, Section 3, Liverpool Township. In the same township, the Ohio Fuel Gas Co. drilled a dry hole at a second test 1,600 feet north of No. 1 same farm, and 450 feet west of the highway, on the George Stroskopp 70 acres, Section 3, while the East Ohio Gas Co. got a nice gas well in the northeast corner of the Phoebe Stroskopf 9 acres, Section 3. In Lafayette Township, the Empire Gas & Fuel Co. is making preparations to drill a test in the northeast corner of the Charles Puches 90 acres, in the Merrick tract, Lot 36. In the same township, the Ohio Fuel Gas Co. has a good gas well at a test in the northeast corner of the H. S. Koppes 20 acres, Lot 13.

In Ashland County, Hanover Township, the East Ohio Gas Co. has an average sized gas well at a second test on the J. H. Miller farm, Section 27, and the Logan Gas Co. is drilling a test in the northwest corner of the L. S. Siddle 40 acres, Section 24. In Orange Township, same county, the Ohio Fuel Gas Co. struck a duster at a test in the northwest corner of the J. H. Bushman 219 acres, Section 2. Logan Gas Co. made a location for a test in the northeast corner of the Elija Piper 50 acres, Section 4, and located a second test in the northwest corner of the P. M. Fluke 50 acres, Section 8.

In Knox County, Jefferson Township, the East Ohio Gas Co. drilled a fair-sized gas well at a test in the northeast corner of the J. M. Miller 75 acres, Section 23. In Clay Township, the Logan Gas Co. made a location for No. 6 in the southeast corner of the B. F. Baird 219 acres, Section 19, and Decker and others a location on the George M. Divan 30 acres, same section.

Geiger & Barnhart have abandoned their location in the southeast corner of the Martha King 81 acres, Section 26, Mifflin Township, Ashland County. In Green Township, the Logan Gas Co. is drilling No. 1 on the W. A. Rowe 147 acres, Section 27. In Sullivan Township, the Ohio Fuel Gas Co. is drilling No. 1 on the L. B. and Evan Stine 122 acres, Lot 61 and No. 1 on the Annie M. Pence 58 acres, Lot 62. The Logan Gas Co. is drilling No. 1 in the southeast corner of the R. N. Shaw 80 acres, Section 12, Clear Creek Township.

KENTUCKY-TENNESSEE

(Continued from Page 65)

must show that the company wilfully turned oil into the creek, or knowingly permitted it to run into the creek, or was guilty of culpable negligence in not taking proper precautions to prevent its escape

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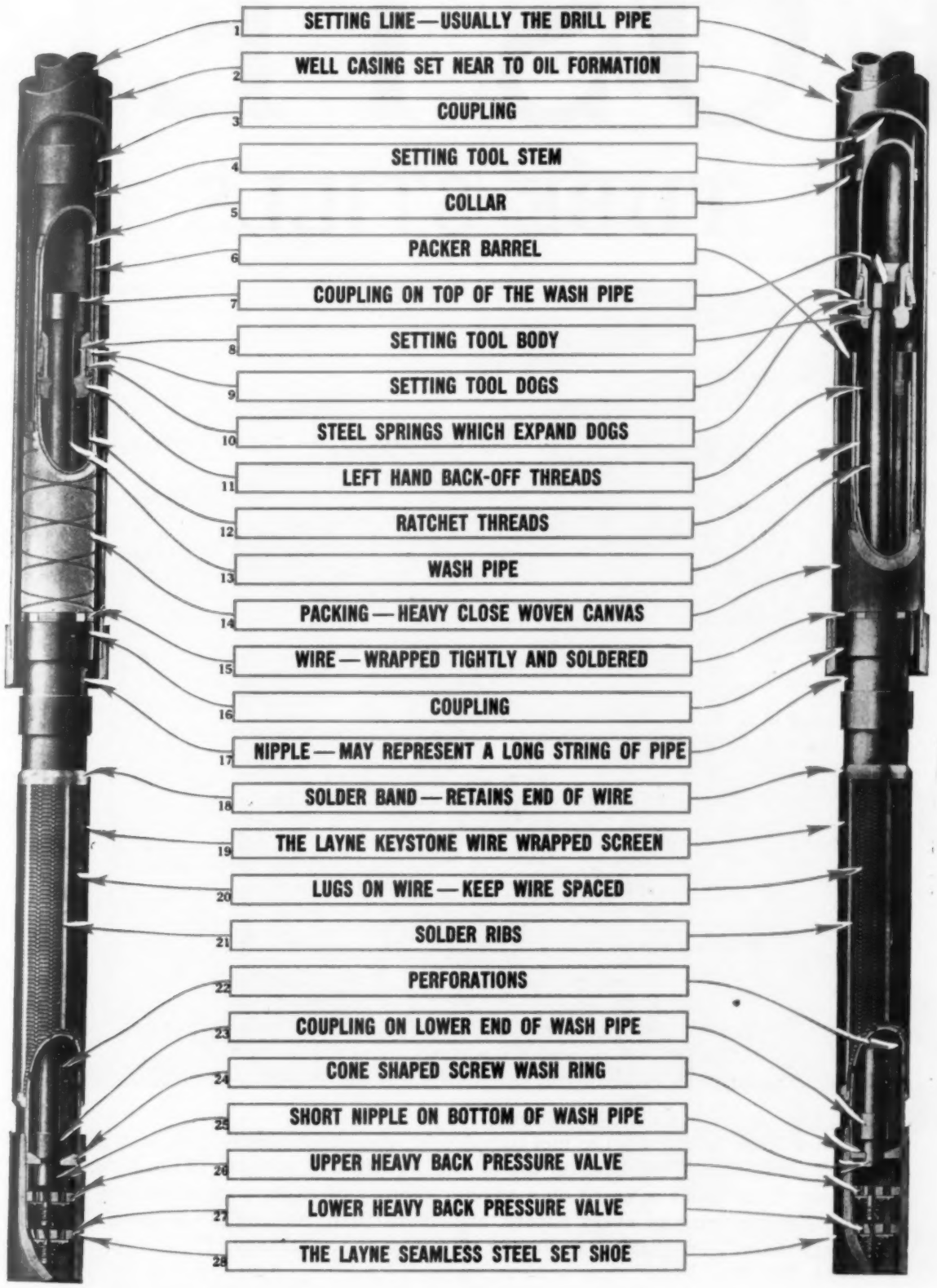
1 SETTING LINE—USUALLY THE DRILL PIPE
2 WELL CASING SET NEAR TO OIL FORMATION
3 COUPLING
4 SETTING TOOL STEM
5 COLLAR
6 PACKER BARREL
7 COUPLING ON TOP OF THE WASH PIPE
8 SETTING TOOL BODY
9 SETTING TOOL DOGS
10 STEEL SPRINGS WHICH EXPAND DOGS
11 LEFT HAND BACK-OFF THREADS
12 RATCHET THREADS
13 WASH PIPE
14 PACKING—HEAVY CLOSE WOVEN CANVAS
15 WIRE—WRAPPED TIGHTLY AND SOLDERED
16 COUPLING
17 NIPPLE—MAY REPRESENT A LONG STRING OF PIPE
18 SOLDER BAND—RETAINS END OF WIRE
19 THE LAYNE KEYSTONE WIRE WRAPPED SCREEN
20 LUGS ON WIRE—KEEP WIRE SPACED
21 SOLDER RIBS
22 PERFORATIONS
23 COUPLING ON LOWER END OF WASH PIPE
24 CONE SHAPED SCREW WASH RING
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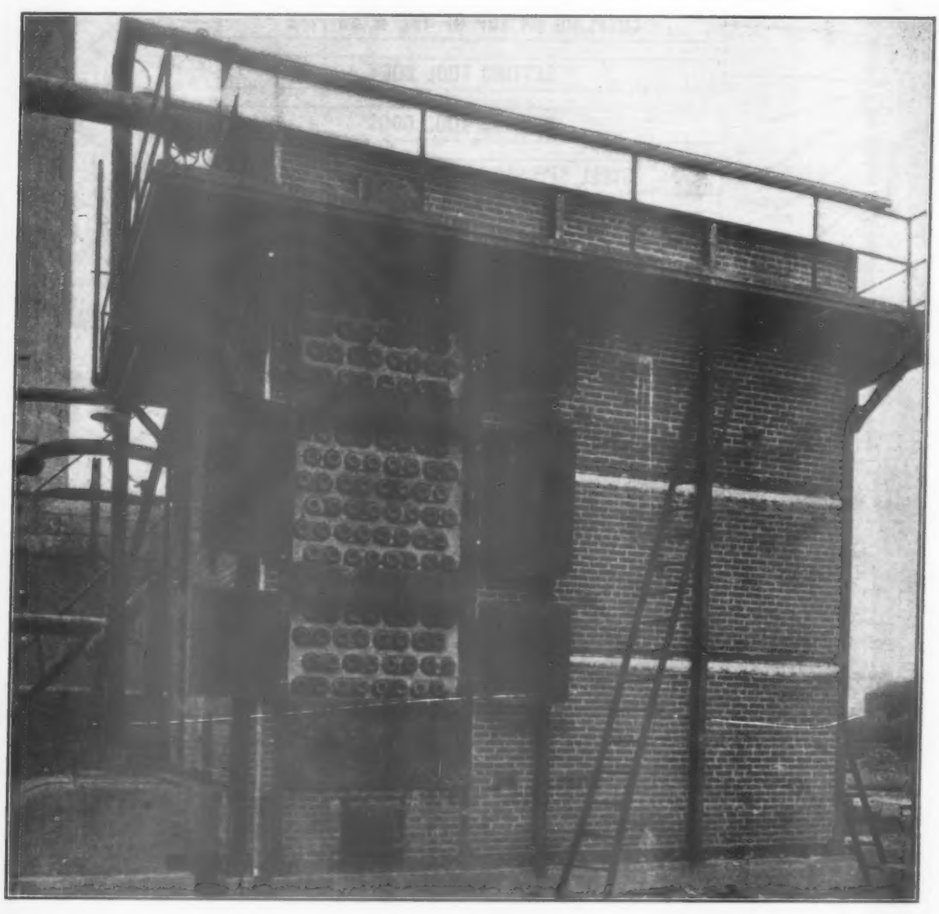

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It was shown that there were two leaks. The first was caused by rust, and the oil was set on fire by some third party and the line burned in two. The second occurred in winter and was due to freezing. On both occasions the leaks were promptly discovered and repaired.

The court held the pipeline company is not guilty of the charges. It did not act wilfully or knowingly; and did not act negligently after the leaks were discovered. Nor can it be liable for maintaining the pipe in a defective condition or for not burying it to avoid freezing. The pipeline was of steel, and neither its length of time in use—about seven years—nor the presence of rust was sufficient to show that the company was guilty of culpable negligence in not anticipating a leak. If the pipe had been buried, this would have interfered with proper inspection and have made it impracticable for the company to have discovered leaks due to other causes.

Week's Work

A summary of the week's work in the Kentucky-Tennessee Field shows 30 completions, 23 producers with an initial production of 381 bbls., 5 dry holes and 2 gas wells. Compared with the previous week, there were 9 more completions, 8 more producing wells, 9 bbls. more new production, the same number of dry holes and 1 more gas well. The wells were distributed by counties and districts as follows:

County—	Comp.	Oil Wells	Prod.	Dry	Gas
Barren	10	8	115	2	0
Owensboro district	4	3	27	1	0
Warren	3	3	9	0	0
Morgan	3	3	9	0	0
Allen	2	1	1	1	0
Lee-Owsley	2	0	0	0	2
Wolfe	1	1	15	0	0
Estill	1	1	5	0	0
Christian	1	0	0	1	0
Clay County, Tenn.	3	3	200	0	0
Total	30	23	381	5	2
Last week	21	15	372	5	1
Difference	9	8	9	0	1

Eastern Division

In the eastern division of Kentucky only seven completions were reported for the week, the best producer being found in District 6, Wolfe County, by the Petroleum Exploration Co., in No. 5 on the Spencer heirs 137 acres, with an initial production of 15 bbls., at a total depth of 1,264 feet. No. 6 is under way on the same farm.

The summer season having passed without any material change in Kentucky crude oil quotations, the trade is settling down to a busy fall and winter season, confident that prices will remain firm. With better weather conditions, a nice increase should be shown in development work until the cold winter season sets in. Wildcatting is getting under headway in southeastern areas, with three wells drilling in Knox County, two in McCreary County and two in Clay County, and should these prove productive of either oil or gas, each county should get a nice play.

The Petroleum Exploration Co. brought in two gas wells drilled on its extensive holdings in Owsley County. No. 1 on the Gabbard heirs farm of 110 acres, in District 18-b, struck a heavy gas vein at a depth of 968 feet, the well showing an open flow of 700,000 feet and a 300-pound pressure. No. 1 on the Walter T. Coombs 62 acres, same district, got the gas sand at a depth of 1,286 feet, with a rock pressure of 290 pounds and an open flow of 1,000,000 feet of gas.

In District 8 of the Irvine Field, in Estill County, the Wood Oil Co.'s No. 1 on the Joe Neal showed an initial production of 5 bbls.

District 30, of Morgan County, to the west of the North Weir Field, the Willson Oil Co.'s No. 40-A on the Lee Owens farm is credited with an initial of 5 bbls. George & Touma drilled in a 2-bbl. well in No. 4 on the L. D. Holbrook farm, while D. A. Wishart and others drilled one of same size in a test on the John McCarty farm.

The north and south Weir Fields of Lawrence - Johnson - Magoffin Counties failed to report any new completions, which is due to weather conditions, although the Louisville Gas & Electric Co. has a well on the Whittaker farm, in the Ivyton area of southeastern Magoffin County, that has drilled into a gas sand but not completed as yet.

Western Division

The western division of Kentucky has taken on quite a wildcatting development in both Barren County and the Owensboro Field, with Barren County leading. The wildcat well drilled by the Petroleum Exploration Co. on the W. E. Denton farm, far west of production in Christian County, proved a duster. This makes at least three known dry holes for that county during the past several years. Christian County lies west of Simpson County and farther west of Allen County. Three wildcat ventures are being made in the Leitchfield area of Grayson County, two in Clinton County, one in Casey County, one in Butler County, which are all watched with interest by the trade.

Barren County

Ten completions were reported from the Glosgow Field of Barren County during the week, the Knob Road district having five of the number. The Star Oil & Gas Co.'s Nos. 12 and 13 Richardson farm reported at 12 and 10 bb's., with Nos. 14 and 15 drilling. A. W. Ziegler, attorney, brought in No. 3 on the Darter Brothers farm for 20 bbls., while his No. 7 on the C. D. Boyd farm struck a heavy dose of salt water at 700 feet, and goes as a dry hole. On the White farm, R. B. Tyler's No. 12 is a 10-bbl. producer, with No. 13 drilling. A. W. Ziegler, attorney, is drilling No. 4 on the Darter Brothers farm.

In the Lecta Pool, southeast of Glasgow, the Esslinger Oil Co.'s No. 14 on the C. B. Jones farm, upon which the discovery well of the pool was found, is estimated at 20 bbls., with No. 15 drilling. D. E. Merrifield, trustee, has brought in what shows for a 15-bbl. well in No. 1 on the Dean farm, and No. 2 is nearing the sand.

In the Emery-Moore Pool, Fred C. Moore's No. 15 Travis farm reported at 8 bbls., and No. 16, same farm, drilling. He also completed a dry hole on the Toddy farm, same pool. The Houchins Leasehold Co. is drilling No. 16 Mayfield farm.

In the Hall Baker Pool, the Consolidated Gas Co.'s No. 47, on the H. W. Duff farm, is reported at 20 bbls., with Nos. 48 and 49 nearing completion. This is a remarkable lease, as the sand lies on a level and most all wells show about the same production.

In the Gorby Pool, W. P. Harley and others are drilling a second well on the Steffey 85 acres, J. W. Porter and others struck a dose of salt water in the first pay sand at No. 1 on the John Matthews farm.

In the wildcat development of Barren County, there are 14 new wells reported going down with hopes of extending producing pools over the county. They are: Gassaway Brothers' No. 1 Toddy farm, Jones & Dawson's No. 1 Pace farm, Stohr Brothers Oil Corp.'s No. 1 Whitney farm, T. J. Simpson and others' No. 1 Edmonds farm, Perkins Brothers' No. 1 McCrory farm, Norris Brothers' No. 1 McFarlin farm, Norris Brothers, Tyler and others' No. 1 Bedford farm, Mann & Greenup's No. 1 Verne Walker farm, Kentucky Petroleum Syndicate's No. 1 Samuel Boles farm, Harrington & Norris Brothers' No. 1 Edward Minick farm, Esslinger Oil Co.'s No. 1 J. Matthews farm, J. E. Carpenter and others' No. 1 Johnson farm, Bakers and others' No. 2 Gasson farm and the Beeford Oil Co.'s No. 2 Pace farm.

The Elliott Oil Co.'s No. 4 on the Elliott farm is 85 feet under the Black shale at a total depth of 326 feet, and whether or not it will make a commercial producer has not been learned at this time.

Lew J. Emery, Jr., Son Co. is drilling No. 3 on the M. S. Chamberlain farm, in the Gorby Pool. This was recorded heretofore as the Houchins Leasehold lease.

Owensboro Field

For some time the Owensboro district has been quiet on account of a lack of water for drilling purposes, but this has been remedied by heavy rains that supply an abundance of it for some time to

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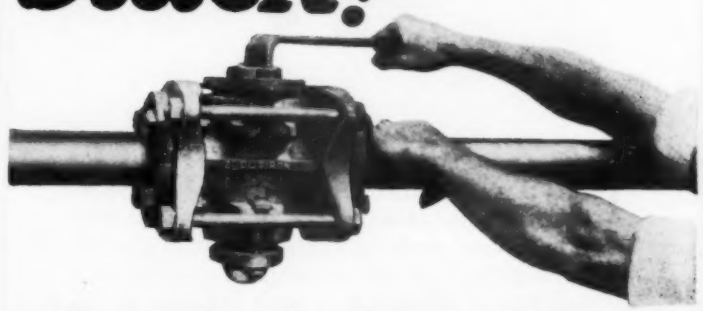

take wrench, strike plunger, and it is—

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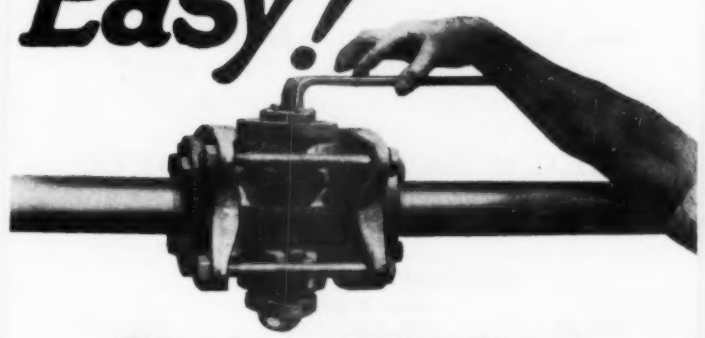

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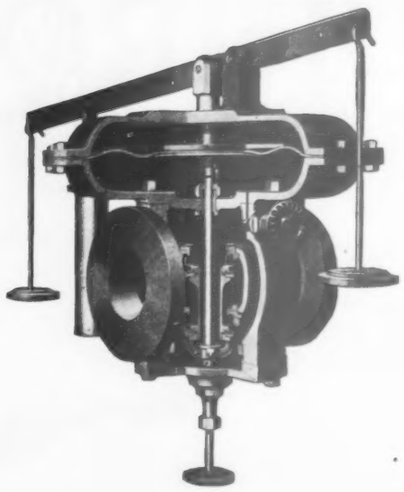

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come and are also putting the roads in rather bad condition for the moving of material. A big development is looked for over the counties of Hancock, Ohio and Daviess, which constitute the Owensboro Field, and much wildcatting will be done. Only four real completions are reported for the week, and there are quite a number of wells already in the sand or about to reach it. The Ohio Oil Co., one of the late entries in the field, is getting busy and will do a large amount of development, some of a wildcat nature and also within defined limits. One distinctive feature about the development work nearest completions is that many of them are in wildcat territory. The finding of oil in any of them will indicate the widening of the present producing areas and will encourage many persons holding leases outside the charmed circle.

The Penn-Indiana Oil Syndicate's Nos. 9 and 10 on the Laura Mercer 84 acres, between Whitesville and Haynesville, are reported at 10 bbls. each. Same company's No. 5 on the C. A. Kelley 260 acres was reported at 7 bbls. initial after given a shot.

The Noble-Bolyard Oil Co. is reported to have brought in a dry hole at its No. 1 on the R. A. Owens farm.

The Petroleum Extraction Co.'s No. 2, on the Kirk & Woodward farm, is reported dry in the Jett sand, but will drill down to the Barlow sand. Caron & Ellis also failed to find oil in the Jett at No. 1 on the A. Martin 65 acres, and may drill deeper. The Surety Oil & Gas Co. shot No. 2 on the J. H. McDaniel farm, near the Pellville Pool, which is but a location away from No. 1, and makes a slight showing. Ellis & Thomas failed to find oil in the Jett sand at No. 1 on the A. Westerfield farm, and will test out the Barlow sand.

The Ohio Oil Co.'s No. 1 on the Daly farm, at Pleasant Ridge, failed to find oil in the Jett sand and went to the Barlow, where a dose of salt water was encountered, and it may drop into the no-good column.

Other Kentucky Work

In the Bowling Green Field of Warren County, Dr. W. B. Cauble's No. 11 on the J. G. Vance farm is rated at 5 bbls. at 450 feet. Phillips & Stewart's No. 1 on the Jeff Coley farm produced 2 bbls. at 1,140 feet, and H. W. Teague's No. 4 on the Allen Manning farm drilled deeper and secured a 2-bbl. producer at 1,065 feet. Petroleum Exploration Co. has started drilling at its No. 5 on the Temp Bailey farm. E. H. Fuller is drilling No. 4 on the Cooper Morgan farm. T. A. Sheridan is still shut down at 320 feet in his No. 6 on the Georgia Ann Davenport lease in the Davenport Pool.

In the Scottsville Field of Allen County, the Kekla Development Co.'s No. 20, on the C. E. and Effie Sanders farm, is only good for 1 bbl. at 390 feet. Buchanan & Buchanan's No. 9 on the Buchanan farm proved a dry hole at 440 feet. Mealey & Mealey are drilling No. 21 on the M. and J. Lewis farm.

Tennessee

With the new extension of the Paragon Refining Co.'s line from Cumberland County, Kentucky, down into the Celina Field in Clay County, Tennessee, there should be a rush of the drill in this important looking area where some good wells have been found. This will give a ready market for the crude produced near Celina, being constructed as far as what is known as the Clark Pool, where close to 4,000 bbls. of crude have been stored in lease tanks for a few months. West a short distance and south some 4 miles from Celina, another pipeline runs through some very productive territory and from the Tinsley's Bottom Field up to Windle, owned by the Stoll Refining Co. of Louisville, crossing the Mill Creek structure, upon which good completions have already been made, as well as across the Crawford Mill anticline that looks just as favorable as the Mill Creek area. Much drilling will be done on these two structures. The three wells on the Mill Creek structure were drilled by the old-time contractor, John H. McClurkin. He has just completed a test well for David McGowan of Steubenville, Ohio, on the J. Will Pennington farm, where he encountered the Upper Tinsley Bottom pay at 406 feet, being about 60 feet below the Pencil Cave. The fuel rose rapidly in the hole, and the well is estimated at about 50 bbls. natural. Drilling is being continued in hopes of picking up some of the lower pays. This is the fourth successive producer located by Mr. McClurkin in the new pool 4 miles south of Celina on Mill Creek structure. He has extensive holdings in that area and expects to do a large amount of work.

In the Clark Pool of Clay County, the Clark Hill Oil Co. has brought in a second test on the Kelly Thurman lease at a depth of some over 500 feet, and a well estimated at 100 bbls. at the start. The second well on the Gray farm, owned by the same company in the same area, overflowed and considerable oil was lost before it could be shut in. This well is being pumped since the completion of the pipeline and is good for better than 50 bbls. Two showings of oil have been passed through in the test on the E. S. Dalton farm, on Knob Creek. Miller and others are getting an outfit ready to start the drilling of a test on the Keisling lease up Obey River and near the Gray and Thurman wells.

EASTERN FIELDS

(Continued from Page 66)

American Oil Development Co.'s No. 3 on the Abram Middleton farm has a show of oil in the Berea grit.

The Griffin Producing Co.'s No. 77 on the Stewart United Oil Co.'s lease is a gasser in the salt sand. No. 3 on the W. B. Foutty farm is a light pumper in the Big Injun sand. In Geary district, Roane County, the Elkins Oil & Gas Co.'s second test on the Fred Smith farm is a gasser in the salt sand. In the same district, the United Fuel Gas Co.'s first and second tests on the G. W. Gandee farm are gassers in the Big Injun sand.

Lincoln County

In Duval district, Lincoln County, the Columbia Gas & Electric Co. has a gasser in the Berea grit at a test on the George P. Alderson farm. In Sheridan district the same company has a gasser in the same formation at a test on the W. G. Hatfield farm. In McComas district, Cabell County, J. S. Farr & Co. have drilled a test on the C. A. Wetherholp farm to a depth of 3,365 feet and found neither oil or gas. In Carroll district, Lincoln County, the Cambridge Gas Co.'s second test on the J. L. Powell farm is a gasser in the Berea grit.

In Skin Creek district, Lewis County, the Mud Lick Oil & Gas Co. has completed in the Gantz sand a test on the W. M. Watson farm. It is a fair gasser. In the same district, the Carnegie Natural Gas Co. is drilling down to the lower sands its second test on the Georgie Wells farm. In Collins Settlement district, the Pittsburgh & West Virginia Gas Co. has the rig completed for a test on the W. G. Bennett farm.

In Meade district, Upshur County, the Union Gas Co. has the rig completed for a second test on the C. S. Heavner farm. In the same district the French Creek Oil & Gas Co. has the rig completed for a test on the Fay Hammer farm.

In Union district, Ritchie County, the Pittsburgh & West Virginia Gas Co. has completed in the Big Injun sand a test on the A. H. McGill farm. It is a gasser. In Murphy district, the Spruce Oil & Gas Co., has completed a second test on the E. C. Wilson farm. It is a gasser in the same formation. In Union district, the Pittsburgh & West Virginia Gas Co. has the rig completed for a test on the S. L. Waggoner farm.

Pleasants County

In Grant district, Pleasants County, Ira Connolly and others have drilled a test on the Soloman Hollp farm through the Keener sand and good for 3 bbls a day. In Troy district, Gilmer County, D. N. Heckert and others have the rig completed for a test on the D. N. Heckert farm.

In Grant disrict, Pleasants County, Dr. Conley is drilling a test on the William Kester farm. In Jefferson district, H. M. Rinehart is fishing on the Emily Rinard farm. In Murphy district, Ritchie

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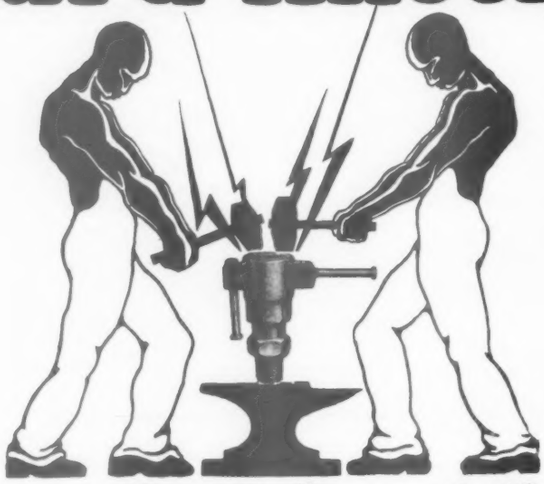

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County, the Hope Natural Gas Co. is rigging up on the J. W. Gorrel farm and made a location on the Edwin R. Tibbs farm. In Union district, the Pittsburgh & West Virginia Gas Co., has started to drill on the Lewis Garrison farm. In Glenville district, Gilmer County, the same company is building a rig on the J. L. Fishback farm and hauling tools to a location on the J. R. Lynch farm. The same company has shut down to repair the rig on the E. D. Fulton farm.

Drilling Tests.

In Union district, Ritchie County, D. M. Hackett is hauling rig timbers to a location on his farm. In Geary district, Roane County, the Ohio Fuel Oil Co. has started to drill on the James Reed farm. In the same district, the same company is drilling on the F. G. Jackson farm and building rigs on the C. A. & M. L. Shamlin farm. In Church district, Wetzel County, the Pittsburgh & West Virginia Gas Co. is due in the sand at No. 3 on the J. C. Bartrug farm and started to drill No. 4 on the same farm.

Lincoln County Tests

In Jefferson district, Lincoln County, the Columbia Gas & Electric Co., has started to rig up on the Louis R. Sweetland farm and made a location on the Gilbert Adkins farm. In Credo district, Wayne County, the Jeffrey-DeWitt Insurance Co., has drilled to a depth of 2,825 feet on its own property and shut down for orders. In Scott district, Boone County, the Downing Gas Co. is drilling on the S. E. Hill farm. In Carroll district, Lincoln County, the Cambridge Gas Co., is rigging up on the W. W. Reynolds farm.

Southwest Pennsylvania

In Jackson Township, Greene County, Morris & Co.'s test on the W. T. Grove farm is a gasser in the Gordon sand. In Morris Township, the Carnegie Natural Gas Co.'s second test on the Calvin S. Day farm is a gasser in the same formation. The same company has a gasser in the same formation at a second test on the Reese heirs' farm. In Whitely township, the Carnegie Natural Gas Co., has a gasser in the Big Injun sand at a test on the Charles Bowers farm.

In Wayne Township, the South Penn Oil Co., has drilled down No. 3 on the Jacob Eddy farm from the fourth sand to the Bayard sand, a total depth of 3,310 feet. It was formerly a light oil producer and is now a gasser good for 390,000 feet.

At Reese's Mills, Franklin Township, Greene County, Elliott, Moore & Co. have completed a test on the J. A. Reese farm. It is a gasser in the Gordon sand good for 3,000,000 feet.

EARLY PIPE DELIVERIES DESIRED; DEMAND ACTIVE

(Continued from Page 75)

tive view of production in the remainder of the year, apparently expecting some decrease, merely on account of the season of the year. The steel consuming industries are all doing well and no decrease is in slight in any quarter unless on account of the season. However, last year there was increasing production through November, and only a slight decline in December.

No Advance Expected

In as much as merchant pipe and oil country goods have not changed as to base prices since the last advance, in April, 1923, there being merely reduced delivered prices in various sections in connection with the abolition of the "Pittsburgh plus" system, there is no thought of any advance despite the heavy demands upon the pipe mills, which have averaged above a 90 per cent operating rate for months, lap weld departments running substantially full and butt weld departments quite well.

In a few portions of the steel market there has been a price stiffening tendency. Quotations on light rails were recently advanced $2 a ton, and the new price, $36, Pittsburgh, is holding. Merchant bars are quoted at 2.10 cents by several mills in small lots, partly to support a 2.00-cent price on large lots, which would be an advance, as some large third-quarter contracts were made at less than the buyers involved have held off from contracting for fourth quarter.

In sheets, the recent $2 a ton marking up of asking prices resulted in much buying at the old figures and the new prices are now in force, with buyers fairly well covered for the quarter, the advanced prices being 2.40 cents for blue annealed, 3.10 cents for black, 24 gauge, and 3.95 cents for galvanized, 24 gauge.

Heavy melting steel scrap, at $17 to $17.50 delivered Pittsburgh district, is off 50 cents from the level struck before the middle of August.

Petroleum Imports Of South Africa in 1925 Showed Decline

By Charles E. Kern

The Oil and Gas Journal Washington Bureau.

WASHINGTON, D. C., Oct. 9.—During 1925 the South African importations of petroleum products dropped to the extent of 2,047,383 gallons below the 1924 record of 39,698,792 gallons, the total for 1925 being 37,651,409 gallons, according to advices to the Department of Commerce from Johannesburg. The f.o.b. value of the imports was £2,184,223, as compared with £2,180,337 in 1924 and the record, £2,632,386, in 1920.

In consequence of the large American share of the trade in gasoline, kerosene and lubricating oils, the imports from the United States were valued at £1,696,684, as compared with £1,663,024 in 1924. The Dutch East Indian imports totaled £431,988, a small decrease from the previous year's £462,923.

By percentage of the total, the American share dropped from 78 per cent to 77.7 per cent, and the Dutch East Indian from 21.8 per cent to 19.8 per cent. The small balance was very minutely divided.

Gasoline Increased

In 1925 the Union's imports of motor spirit (gasoline) made a new record of 20,889,828 gallons, a gain of a little more than 2,000,000 above the previous high mark in 1924. The value, £1,274,825, is still below the £1,462,270 for 1921, when only 11,339,180 gallons were imported. In 1925 the average f.o.b. value per gallon was 1.2205 shillings, as against 1.2708 shillings in 1924 and 2.57 shillings in 1921.

The South African trade in petroleum is tending toward bulk distribution in place of the case system that has been the standard for so long. This has been in part the result of competition and in part the outcome of a larger volume that has made the bulk method an economic possibility.

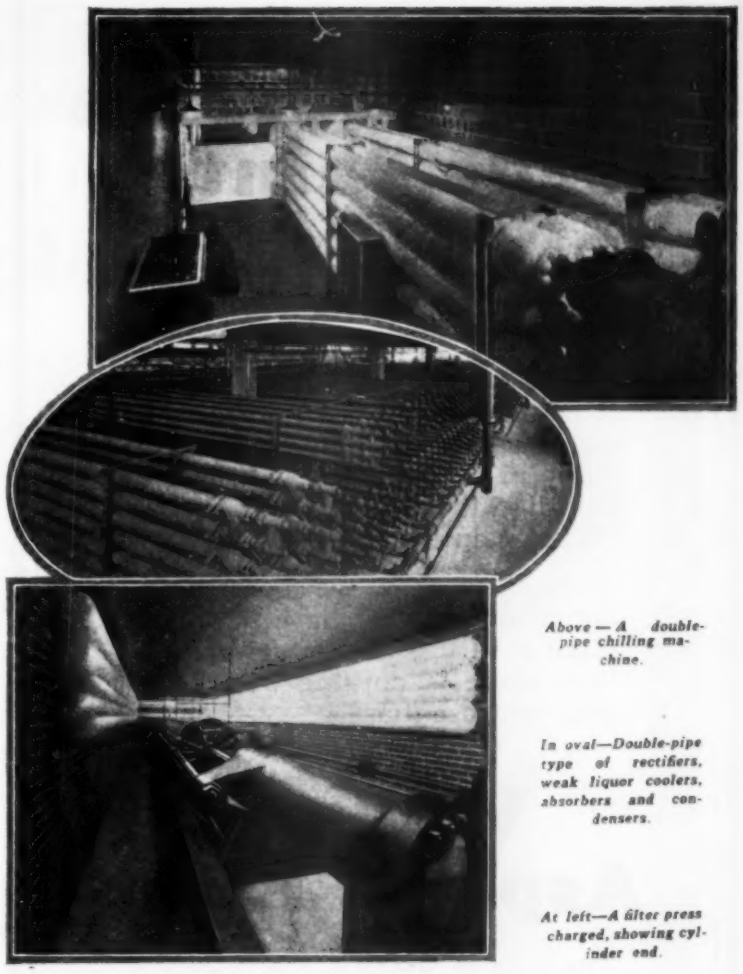
This system was first instituted by a British company in 1923 and was aided by a tariff differential of a penny (sterling) a gallon, the duty being 2 pence a gallon on bulk and 3 pence on case importations.

Record for Kerosene

Imports of kerosene, or paraffin, made a new record of 10,970,116 gallons in 1925, an increase of about 465,000 gallons over the previous high figure of 1924. In spite of the increase in volume, the value dropped from £490,402 in 1924 to £465,182 last year.

On the other hand, shipments of lubricating oils were somewhat disappointing. With the high level of industrial operations prevailing, it was expected in South Africa that imports would increase by perhaps 10 per cent. Instead, there was a slight decrease from 3,631,733 to 3,587,577 gallons and from £410,682 to £383,246, the result in part of local production.

The largest decline was in fuel oil imports, those in 1925 being only about 25 per cent of the 1925 total, or 1,438,568 gallons. Most of this came from the Dutch East Indies. In addition, over 1,850,000 gallons were exported to Spain from stocks on hand.



Above — A double-pipe chilling machine.

In oval—Double-pipe type of rectifiers, weak liquor coolers, absorbers and condensers.

At left—A filter press charged, showing cylinder end.

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SUGGESTIONS ON SODA ASH USE IN CORRESPONDENCE OF SURVEY

By Charles E. Kern

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Oct. 9.—Additional correspondence of the United States Geological Survey relating to the soda ash treatment of oil wells contains many suggestions that will be of value to oil producers who are becoming familiar with this recovery process.

Early in the initiation of the soda ash process for driving petroleum from oil sands by means of water solutions of salsoda it was made very plain that this process as outlined was to meet conditions existing in northwestern Pennsylvania. It was clearly stated that it might not be applicable where strong brines are encountered nor where driving and pumping wells are over 200 feet apart.

The foregoing statement was made August 1, 1925, 13 months ago, but the present view has been revised as the result of tests and is that driving with soda solution is likely to be successful even where brines strong in calcium salts are encountered and where wells are spaced as much as 600 feet apart.

"Saturated solutions of either washing soda or soda ash are used," states Dr. P. G. Nutting in advising a correspondent. "About 50 bbls. per well are introduced before the water is let in. The driving head should be roughly 4 feet per foot of drive, that is, 600 feet head of water when the drive is 150 feet to the exit well. This head produces a drive of 2 to 8 inches per day. Too rapid a drive will result in oil pockets being left behind. A very slow drive at the start is advisable in that it permits the formation of a continuous oil front. The results obtained by the use of soda in the driving water, are of course, apparent only as an enhanced ratio of oil to water in the latter part of the drive."

Advice Offered

Other advice offered to a well owner states, "A saturated solution of soda ash has been found to drive oil from sand completely and rapidly just as do solutions of washing soda. The solutions behave precisely alike. The sole objection to the use of soda ash is the difficulty of getting it into solution. It dissolves very slowly even with constant stirring while washing soda dissolves very rapidly even in cold weather without stirring. The extra cost of making up solutions might well offset the lower purchase price.

"The company quotes a price of $1.81 per 100 pounds, or $5 per barrel of 280 pounds, as against $4.20 per barrel of salsoda. However, the latter contains $10H_2O$ per molecule so that it is a little over twice as expensive per pound of anhydrous sodium carbonate as the soda ash.

"A check laboratory test with plain water drive showed an oil recovery of 30 per cent and a ratio of driving one-tenth as fast as with saturated soda solutions. Soda solutions diluted to one-twentieth saturated showed an oil recovery of 100 per cent, but a rate of drive only one-eighth as fast as the same solutions concentrated. This indicates the importance of so operating as to secure the strongest possible solution in contact with the oil. A little extra initial expense in pumping and piping may be well repaid in increased rate of recovery."

Putting Soda in Wells

Another correspondent repeating a statement of Doctor Nutting respecting method of putting it in the wells, said: "If the well has a McGregor seat below the depth of the casing—have a cone made with the largest diameter so it will go inside the tubing and ground jointed so it will shut off the water when it goes into the McGregor seat and screwed onto a 1-inch pipe that will run to the surface and be connected into a tank in which the soda ash will be put with enough water to make a solution and stirred, putting in the solution say 10 bbls. at one time and then let it rest so that the capillary force will start and not have it pushed into the softer sands by the big pressure above. This period of rest between that time and putting in the next quantity is a guess that one can make as well as another, but I would say that a day or two might do as well as waiting longer, then put in another amount of 5 to 10 bbls., and continue until the dose is all in and then after a short rest take out the 1-inch pipe with the cone on the bottom and let the water go in, follow up solution and keep it ahead.

"If there is no McGregor seat, a packer can be made that will fit on the 1-inch pipe and go inside the tubing and thus shut off the water.

"While it is greatly preferred that the solution be put in a new hole drilled to be flooded, there are thousands of new holes that the owners will want to use and the results will probably be as good, or at least be good enough to greatly repay the cost.

Treating Flood Holes

"In treating the old flood holes we should first shut off the water that is going in in some such way as outlined above and then introduce the solution the same as in a new hole, after letting it stand a few days so that the water standing in the tubing will have time to drain out into the sand.

"If it is not practical to shut off the water in the tubing, then introduce a small pipe from the surface to the oil sand and pump the solution in slowly and it should force the water up out of the sand because the specific gravity of the solution 1.2.

"In his experiments the doctor used common washing soda, which is salsoda, and he says that this is exactly the same as soda ash except that it contains water to make it in crystal forms instead of a powder as soda ash is, but he will recommend the use of soda ash unless more than 2 per cent calcium chloride.

"I asked the doctor what effect the soda ash would have on b.s. (paraffin) both in the tubing and in the oil sand. He said it should have a good effect and should loosen it so that it will pump.

"His (Doctor Nutting's) idea is that the capillary force will go through the sand, both coarse and hard sand, with nearly at the same pressure and while the daily production of the wells may not be greater than at present in most cases the wells will produce longer before they are watered out and much more oil recovered than with the water drive."

Result of Treating

A letter from a correspondent in Bradford, Pa., says, "Up to the present time the Kendall Refining Co. has treated 23 wells with soda and plans to put it into 30 more during the summer. I am pleased to tell you that one of its wells that would be affected by the soda has shown a marked increase in production within the last month. The production jumped from 1.5 to 8 bbls. in five weeks. I enclose decline curves of this well and a well on their Hatch property which is about 800 feet from the good well. This production is exceptional for this area in the field. An ordinary well will rarely make more than 3 bbls. a day at the most."

"In dilute solutions (about 1/20 of the original) it, like soda solutions one-twentieth saturated, still drives the oil out clean, but much more slowly than the concentrated solution," states Doctor Nutting. "If a clean rapid drive is desired, it is of the utmost importance to so introduce the driving solution that it is highly concentrated next to the oil front. A little pumping and piping in preparation for a soda drive would doubtless prove very worthwhile."

Several operators have ordered carload lots for their own use and plan to use 5 to 7 tons of solution per well. Cal-

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The most adaptable Tubing Tongs

Easy to handle
Fit different diameters

You'll get quicker action with a Wilson Tubing Tong. Each tong fits on the tubing as well as on the coupling without adjustment. There are two steps on the lug where the latch fits, making unnecessary any adjustment.

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Spring-latch Tubing Tongs

Each Wilson Tubing Tong takes tubing above and below its own size range. For instance, a 2½″ tong will take a 2″ coupling, 2″ upset coupling, 2½″ tubing, 2½″ tubing coupling and 3″ tubing. To do this with other makes requires several tongs. So you see the big saving you can make by selecting a Wilson.

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No. 1 catches 5⅝-in. to 4 -in.
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The *Never-Slip* is made to handle all sizes of pipe and casing up to 20 inches in diameter.

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cium or magnesium salts above 2 per cent are objectionable.

Doctor Nutting sees no objection to the use of hydrostatic pressure provided there exists near the well no loose strata or crevices that would cause a break in the solid oil front as the solution advances. If a new oil front is to be formed from scattered oil pockets the advance should be very slow until it has been formed.

The resulting solution is the same whether you start with soda ash or with washing soda. The object of testing soda ash in a laboratory drive was to make sure that no impurities were present which might affect the drive.

MANY IMPROVEMENTS IN DRILLING METHODS

(Continued from Page 80)

spring breakout and makeup post, the spring hook, the combination steam trap and lubricator for the pumps and engine, the steam breakout gun, are all developments which have improved the drilling operations during the past year or so.

I believe, however, that the greatest single improvement made in oil field operations recently has been the development and application of electricity to the industry, and the greatest improvement to the drilling end of the game has been the development of the Hild Universal Differential Drive for rotary drilling.

It is a scientific piece of machinery that is at once practical and flexible and has opened the way for the drilling of wells to be done on a scientific basis.

Electric Rig

The Hild electric rig, as you know, is two motor driven gear operating through a differential, one motor driving the draw works, the other driving the rotary. The speed of these motors can be set so as to regulate automatically the feed of the drill stem or weight of the drill bit on bottom to any desired speed or weight and once fixed by the driller it will stay fixed, and will feed automatically at the set rate of speed. The human equation in the form of the driller is eliminated after the motors are once set. No dependency is placed on him to feed the bit manually and he is under no fatigue stress. There is no question but that it requires a scientific and a practical knowledge of drilling operations in order to make use of the flexibility and capability of the machine. The driller must be one who recognizes immediately the changes in the formation being drilled and upon recognition he must change his control so as to speed up or slow down the rate of speed with which he is feeding the drill stem. No two formations drill alike, that is, can be penetrated with the same degree of rotation or weight of drill stem, and the driller can not set his control to feed the drill stem at a certain definite number of feet per minute or inches per hour and forget about it if he is to take full advantage of the equipment at hand.

With this machine, and a good, practical, educated driller, well versed in the knowledge of formations, it has been demonstrated beyond any doubt that he, through experiment, has determined how different formations should be drilled to the best advantage. Very few drillers will drill any formation alike, that is with same weight on drill bit or same number revolutions of the drill stem. This is because no hand feed drill stem can be fed uniformly for any length of time. The equipment will not permit it. Neither will the physical endurance of the driller permit it. There should be only one correct way of drilling each formation and with the Hild rig it can be so drilled if the driller has that knowledge.

Automatic Drilling

The Haliburton automatic drilling machine, designed for either electric, steam, oil or gas engine operation is now being tested at Goose Creek and I understand is operating very satisfactorily.

An engineer by the name of C. R. Edwards, president of the Houston Engineers, Inc., Houston, Tex., has patented a new process for use in drilling wells. This method is only the addition of vibration to the bit of the ordinary hydraulic rotary system. The elasticity of the rotary drill stem is the secret of the success of the system of drilling. It permits the bit and a little of the lower end of the drill stem to be very rapidly vibrated up and down against the bottom of the hole. These vibrations are caused by rapid "water hammers" in the drill stem. These vibrations are up in the drill stem by a hydraulic vibration generator driven by a high-speed engine or motor. This machine is in course of construction and is not yet on the market.

Production Methods

Considering strictly the production operations and the improvement that has been made, there have been few changes over the old time methods, especially as far as that part of the equipment under the ground.

It is true that the standard rigs proper are greatly improved, in that the old band wheel, long engine house, steam engine drive have been superseded by the use of a double reduction gear or a Lufkin worm gear. All parts of the rig are now being made out of steel as nearly as possible.

The actual pumping equipment still consists of varied assortment of special pumps, plunger and cup type, long stroke devices, but it seems in the Gulf Coast that each well has a pumping condition all its own and requires special attention and a different kind of pumping equipment.

There are so many sand strata with their different gravities of oil, various sand conditions, salt water actions with its effect on tubing, valves, balls and seats, that there can be no standardization. Equipment that will work good in one well will not pump in another.

The use of all-steel valves, crosses, etc., for well connections is a decided improvement over the old cast iron valves, both from the standpoint of strength and the ease of handling.

If any one thing can be said to have more greatly improved drilling and production methods in the Gulf Coast than any other it is the general application of electricity to oil field operation. There is no oil field operation performed by steam energy today in the Gulf Coast to which electrical energy can not be applied to a greater advantage from viewpoint of flexibility, power required and economy.

Our company will not purchase any more steam drilling rigs where electric power of a dependable character and of a fair rate can be obtained. We have 14 electric rigs in operation now and have six more on order.

As to their operation, we drilled 42 wells with them last year, varying in depth from 1,000 to 4,200 feet, and found that they were as flexible as steam, more powerful, as fast and three times as cheap to operate. No extraordinary trouble was experienced. We have more than 500 wells being pumped individually by electricity and believe we have increased our production 10 per cent.

The Gulf Coast fields within the next year will have their production operations almost 100 per cent electrified.

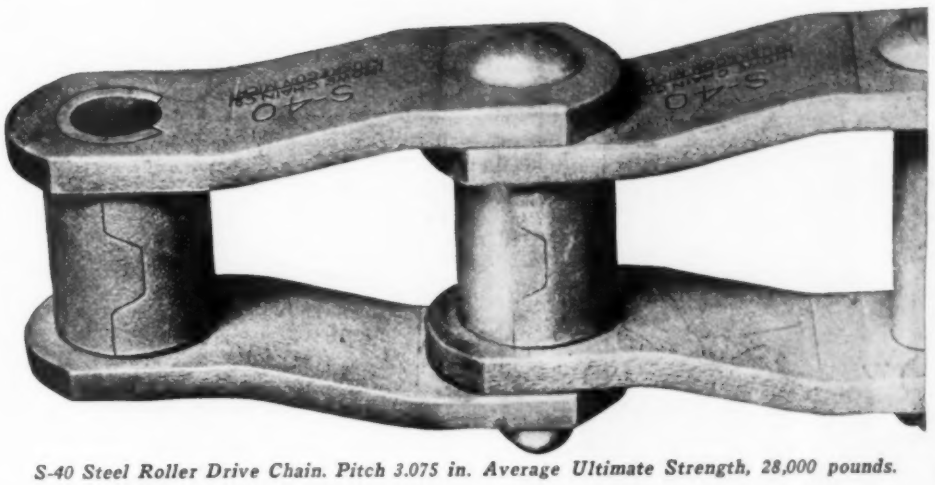
OIL OPERATIONS IN EGYPT

Four new producing wells in the northern extension of the main Hurghada Field and one in the main field were drilled by the Anglo-Egyptian Oilfields, Ltd. in 1925, according to a report to the Department of Commerce by Vice Consul Joseph I. Touchette, at Alexandria. The production was almost entirely obtained from the Hurghada fields, the oil pumped from the Gemsah Field being comparatively insignificant.

HANOVER OIL YIELD

A daily yield of 188 bbls. of petroleum has been reported from a drilling 24 inches in diameter in the Lueneburger Heide in Hanover. The find has encouraged further drilling in this area. German petroleum, fit only for lubricants, is confined to the Province of Hanover, where a yield of about 411,000 bbls. was obtained in 1925.

HOWE CHAIN



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Exceptional performance under such conditions has established the reputation of Howe Chain wherever oil well chains are used.

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Th' paper says Cal appeared in a new fall hat, but I bet it was a workover.

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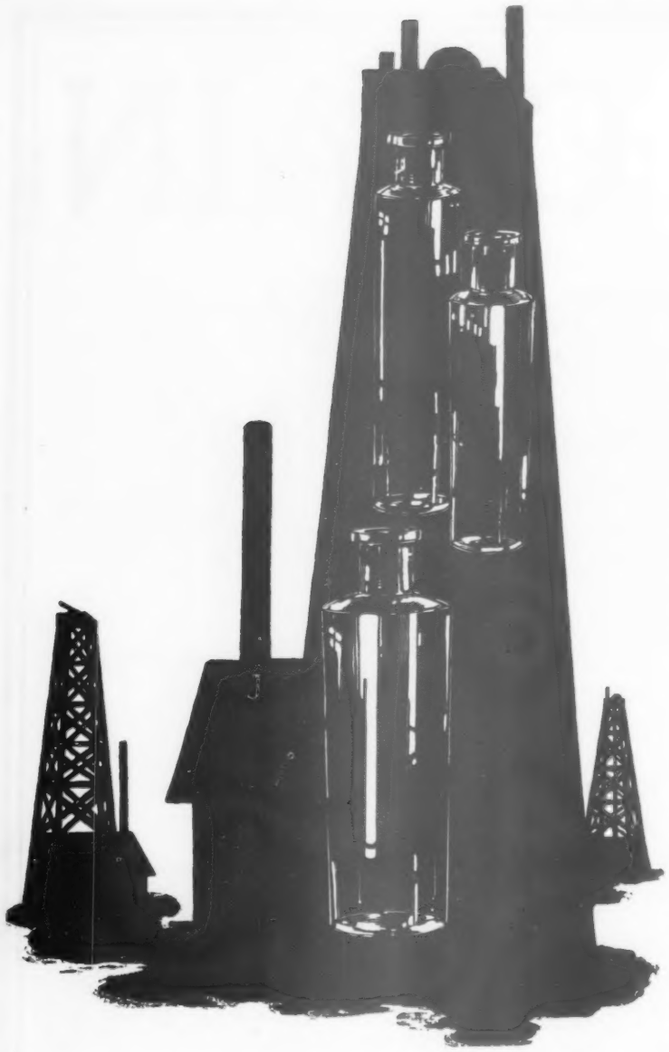

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OIL POSSIBILITIES OF COLOMBIA ARE INTERESTING MANY COMPANIES

By Charles E. Kern.
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Oct. 11.—A most complete and up-to-date list covering the petroleum industry of Colombia has been compiled from information received here from correspondents in Bogota.

Not only are all of the important oil companies operating in Colombia included in this list, but many facts regarding these organizations are given, with special attention to the ownership or financial connection of each company.

The Tropical Oil Co., is the only oil producing company operating in Colombia on a large scale. Its production given in barrels of 42 gallons follows:

	Barrels
1921	66.750
1922	322.786
1923	424.875
1924	444.744
1925 1st half year	588.483
1925 2nd half year	418.225
1926 1st half year	1,140.969

In May when the Andian pipe line to Cartagena started operation, production was 15,000 bbls per day. The first day of August production reached 17,500 bbls In a few months it should reach the full capacity of the pipe-line which is 30,000 bbls per day.

The Tropical property is the old De Mares concession, containing 1,319.344 acres and is bounded by the Magdalena, Sogamoso, and Carrere Rivers and the Eastern Range of the Andes.

Development of Property

One hundred wells have been drilled on this property. In May, 1926, there was a total of 91 wells of which 89 were in production, must of them located at El Centro not far from Infantas. This field is connected with the Magdalena River port of Barranca-Bermeja by highway and oil transmission pipeline. Though oil is struck at varying depths the average is around 2,600 feet. In 1925, 46 wells were drilled having a total of 97, 394 feet or an average of 8,116 feet per month, while the monthly average in 1924 was 5,068 feet.

At Barranca-Bermeja the company has a refinery of 3,000 bbls capacity producing gasoline, kerosene and fuel oil. It also has installed a can factory, electric light and power plant, ice plant, tank farm, machine shops, warehouses, and sales office.

This property was unhealthy tropical jungle, but the Tropical spent much on improving the sanitary condition. All men are housed in screened and sanitarily equipped dwellings. There are accommodations for some 300 or 400 families as well.

The company maintains a base hospital at Barranca Bermeja, with 100 beds and a field hospital with 50 beds both modernly equipped with American and local physicians and surgeons.

The company at present maintains 22 drilling outfits, employs some 4,000 men of which 400 are foreigners.

There are already constructed 130 kilometers (82 miles) of highway costing $1,800,000, and more under construction. The company has in operation 28 kilometers (17½ miles) of railroad, 1 meter gauge with 2 gasoline and 2 steam locomotives. It has five large tugs and some 15 barges on the Magdalena River.

South American Gulf Oil Corp.

The South American Gulf Oil Corp is a subsidiary of the Gulf Oil Co. of Pittsburgh. Recently purchased rights in the Barco concession of 1905 from H. L. Doherty & Co., of New York. It recently struck oil at 900 feet on its properties north of the Tropical on the Sogamoso River. The well burned a couple of days, but was tapped. This company is spending $500,000 on drilling outfits ect. It also has properties under lease at San Andres de Sotovento and other parts of the coastal region.

South American Oil Exploration Co.

Owned by Pan American Oil and Transport Co., which is controlled by Standard Oil Co., of Indiana, who recently purchased from Doheny.

Mr. Ordonez, a geologist has recently been in conference with Diago Martinez & Co., of Cartagena in reference to this company's lands in the lower Sinu River region near Lorica where the Standard Oil Co. of New York started three tests in 1914-1915 and suspended operations on the death of Vice President Bemis in 1916 These three tests were drilled at Coconllo, San Sebastian, and El Viento, the depths varying from 1,600 to 2,400 feet.

Coastal Oilfields of Colombia Ltd., London

Maintains an office in Cartagena. This concern took over the properties of La Compania Colombia Oilfields Ltd., at Las Perdices in the district of Tubara, Atlantico originally belonging to The Jenks Syndicate of London and the Cartagena Water Works group. Thirteen wells have been started or drilled on this property. It has a property located at about 20 kilometers southeast of Puerto Escondido, Bolivar, on which it began drilling September 18, 1925.

The Richmond Petroleum Co.

This concern has an office at Barranquilla Colombia. It is a subsidary of Standard Oil Co. of California, began drilling a test at La Valeria in the District of Usiacuri, Atlantico, on February 14, 1924. This and another well drilled with rotary failed due to caving on account of soft soil. The company is putting down a third test with percussion drill, but will have to abandon this owing to caving and lost tools in the hole.

Transcontinental Oil Co.

Drilled several wells near Honda without result. At present has suspended operations due to trouble with driller and lack of water, but will probably resume operations soon.

Interdepartmental Oil Co.

Medellin, a Colombia company Among prominent stockholders are the Ex-President of Colombia, General Pedro Nel Ospina and Harold B. Maynham, American Consular Agent at Medellin. The company has concessions south of the Carare, near San Fernando, about 200,000 acres and 525,000 acres in the Sinu Region. This concern is said to have a paid in capital of $100,000 of which it has expended $90,000 for exploration and concessions.

Amerada Co.

Sidney Paige of this company is looking for oil properties in Colombia.

The Jenks Syndicate of London

Has taken over 74 leases on the west side of the Sinu River in the Department of Bolivar from the Gia Expotadora de Petroleo, and has started drilling two tests on one of these.

Santander Corporation

Offices 25 Broad St., New York. A recently formed concern which, it is said is being financed by Hayden & Stone. It is just entering Colombia and has no leases as yet. On August 5, 1926, Silas H. Wright, Vice President and Colombian representative arrived in Bucaramanga looking for oil lands.

Colombia Syndicate

Expects to drill two tests soon in La Tigra lands, Rio Lebrija region, Norte de Santander department. Started six tests a couple of years ago, but abandoned without results.

Latin American Petroleum Corp. of Colombia

A subsidary of the Standard Oil Co. of California. Drilling in the Carmen and San Jacinto Districts of the Department of Bolivar. Up to the present has not struck oil in commercial quantities. Four wells have been drilled. Its No. 1 Carmen was abandoned at 4,034 feet, No. 1 San Jacinto abandoned at 4,615 feet. No. 2, drilling at about 3,700 feet on July 31, 1926. No. 2 San Jacinto, which struck a 30,000-bbl. flow of salt water at about 3,600 feet, is standing at 3,734 feet.

Mid-Colombia Oil and Development Co.

Same as Transcontinental Petroleum Co. Properties are located in the Depart-

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INTERNATIONAL SERVICE—*Everywhere in the Oil Fields*
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the *Spiral Stripe*
protects you against mistakes and substitution
also look for name and year rolled in metal

Through Bad Lands

You have them, in spots at least, on every pipe line;—places where corrosion is especially active due to soil composition and presence of water and moisture in excessive amounts. Covering pipes with protective coatings is an aid to long life; but only if the base metal is in itself a highly rust-resisting material can the best results be obtained. Such metal is also a safeguard against corrosion on the interior pipe surface, where the application of protective coatings in the field is impracticable.

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BYERS PIPE

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ment of Cundinamarca. Drilled a well at Guataqui and is drilling a test in the municipality of Guaduas.

Magdalena Syndicate

Offices at 90 West St., New York. Owns large area near Gamarra. Includes all lands previously owned by Granada Oil Corporation of New York. It is now re-drilling the old Granada Oil Company's well at Nato and is reported to have found oil at 1,000 feet depth.

Carib Syndicate, Ltd.

Of 40 Rector St., New York. Owners of part of Barco family royalties and one-fourth Colon Development, i. e. Colombian Petroleum Co. of Delaware and Colon Development Co., London, and 60 per cent Equatorial Oil Co., having properties adjoining Tropical Oil Co., on north, also extensive holdings on Atlantic Coast.

Prudential Oil Co.

(Anthony Brady estate), 17 Battery Place, New York, has lands near Honda.

Emerald Oil Co.

Has lands near El Banco. Mr. Disher, Bartlesville, Oklahoma is reported to be head of this company. He was formerly with H. L. Doherty & Co.

Michael Spellacy (Motilone Oil Co.)

Is interested in lands in the Magdalena River Valley near La Gloria and also in the Llanos Plains to the east in the Orinoco River and its tributary basins. Cleveland capital is said to be backing this interest.

Leonard Oil Development Co.

Oliver Building, Pittsburgh, Pa. The properties of this company in the Sogamoso region are under lease to the Gulf company, which is operating and drilling there. The ministry of industries is studying the titles to land this company claims.

Lobitos Oil Company

An English company now making location for test in Sogamoso region on former Joy concession East of Puerto Wilches. These lands (14,000 hectares) have old established titles. This company has denounced other large areas in the same region under the petroleum law. Also interested in Carare region, department of Santander.

Caribbean Transport Syndicate, Ltd.

English, Mr. Donan represents in Colombia, interested in the Sinu region.

Union Oil Co.

Allied with the Standard Oil Co., of California. Has lands in the Meta, now used for cattle grazing. Mr. Martin, represents concern in Colombia.

Sociedad Colombiana De Fomento

Local concern, Lucas Caballero, manager, has lands Carrare region. Luis B. Martinez interested.

Caribbean South American Development and Transport Co., London

Mr. Donan at present representing in Colombia. Sir Henry Galway interested, now in Colombia. Said to be backed by Anglo-Persian Co. Negotiating for 210,000 hectares in the Sinu region.

The Andian National Corp. of Canada began the construction of an oil pipe-line in March, 1925, (contract dated October 1, 1923) from Momonal, near Cartagena to Barranca-Bermeja, a distance of about 325 miles. The connecting pipeline, from El Centro to the Galan pumping stations is 26,780 kilometers. At Infantas, near Barranca-Bermeja, are located the wells of the Tropical Oil Co., which are connected up with the pipeline at Barranca-Bermeja. The pipe is made of 10-inch steel tubes. Total estimated cost around $30,000,000. The capacity of the line, with all eight pumping stations going, will be around 30,000 bbls. per day. There are 11 terminal tanks of 80,000 bbls. capacity each at Momonal terminal in Cartagena Bay and at each pumping station there are two tanks of 30,000 bbls. capacity each. It began operations on May 1, but has not yet been able to get full capacity, due to the fact that it has only four of the eight pumping stations running. At Momonal there are four pumps of 2,350 bbls hourly capacity for getting oil onto the tank steamers.

SOUTHWEST WILDCATS

(Continued from Page 53)

in Duval County, 6 miles south of the Cole gas field, which cored a sand carrying some oil but which got a bad cement job, reset but again got a bad job and they are considering carrying that hole down from present depth of 1,789 for a deep test and start another. The well is a few hundred feet north of their first test, which got gas spraying oil. The Magnolia company paid $200,000 for acreage around this well.

Considerable interest centers in Kleberg County, where Humble Oil & Refining Co. more than a year ago discovered a pool but has been having water trouble and is now about to test out No. B-1 Dennett, more than a mile north, which at 2,040 feet is nearing the sand depth of No. 2 Kleberg trustee, which is producing at 2,052 feet, and which is 360 feet south. No. B-1 Dennett has set over 2,000 feet of 10-inch.

Duval County

Daniel & Best, 150 feet from the west line and 300 feet from the east line, Block 1 in No. 1 J. Benavides, have spudded in. Buffam and others' No. 1 J. Benavides, Block 38, is drilling at 1,250 feet, 150 feet from the east line and 660 feet from the west line. O'Hern & Seacord's No. 2 Benavides, Survey 174, Block 12, 5 miles south of the Cin-Tex Field, tested at 1,789 feet, but casing failed to hold, and they may deepen the test and start another to test the sand at which No. 1, the discovery well, made a large flow of gas. Humble Oil & Refining Co.'s No. 10 Singer, northern end of Survey 4, is drilling at 807 feet; No. 5 Schallert, Survey 255, north central part, is drilling at 3,270 feet. Humble-Reiter-Foster, Survey 406, in No. 1 Kohler, 660 feet from the SE cor., is drilling at 718 feet; No. 2 Kohler, Survey 168, location which is 1,320 feet from SE lines, is setting 10-inch casing at 406 feet. Simms Oil Co.'s No. 1 Schallert, Survey 241, is drilling at 3,792 feet. George M. Ball, Survey 463, No. 1 Roach, in center of survey, is drilling at 3,320 feet. National Refining-Lewis Oil, Survey 668, No. 1 Dinn is drilling at 1,770 feet, location is 200 feet from the SE lines. Humble Oil & Refining Co.'s No. 1 Dowdy, Survey 272, 425 feet from NW lines, is drilling at 3,462 feet. Houston Oil Co.'s No. 1 Beale, Survey 571, Block 10, SW cor., is standing.

Jim Hogg County

Hazlitt-Simmons' No. 1 Schroder, Survey 16, Block 10, 150 feet from NW lines, is drilling at 2,500 feet. Hoad and others' No. 1 Palacious, Block 247, 150 feet from SW lines, is standing at 1,900 feet. O'Byrne and others' No. 1 Palacious, SW 40 acres of Block 14, Survey 230, is drilling at 1,600 feet. Derrick is up for Alworths Brothers' No. 1 Garza, Survey 39, Block 11, 150 feet from northwest and northeast lines. Associated Oil Co.'s No. 1 "B" Lopez, Block 20, Sharel, is drilling at 2,246 feet, 600 feet from the south line and 414 feet from west line.

Starr County

Danciger and Dauchy & Maddox's No. 1 Newman, Survey 232, in Judd ranch, 98 feet from the north line and 930 feet from the east line, is to spud in within a few days. Southern Exploration Co.'s No. 1 Guerra, Porcion 69, Share 173-B, is moving on for a test, 150 feet from the south line and 1,000 feet from the west line. Ramsey-Maxey Oil Co.'s No. 1 Kelsey, Porcion, 76, made a little oil and salt water at 2,300 feet, and has been abandoned. Simms Oil Co.'s No. 1 Salinas, northwest one-half of Porcion 80 and 81, Block 6, Share 38-C, is drilling in hard rock at 20 feet. Pearson and others' No. 1 Garcia, Survey 933, 250 feet from NW lines, has been spudded in.

Webb County

Cole Petroleum Co.'s No. 9 "A" Benavides, Survey 753, Block 7, is drilling at 3,376 feet; No. 10 "B" Benavides, Block 5, Survey 3, is drilling at 4,200 feet. Location is 150 feet from the southeast line and 275 feet from the northeast line. W. A. Weathley and others' No. 1 Reiser, Block 7, Survey 1,618, is drilling at 1,620 feet. Hadley-Marland, Survey 49, northeast half SW, is drilling at 2,565 feet, in No. 1 De Spain. M. J. Bashara's No. 1 Espejo, Block 75, 222 feet from west line and 55 feet from south line, is drilling at 400 feet. Magnolia Petroleum Co.'s No. 1 Neal, Block 12, Survey 132, SW,

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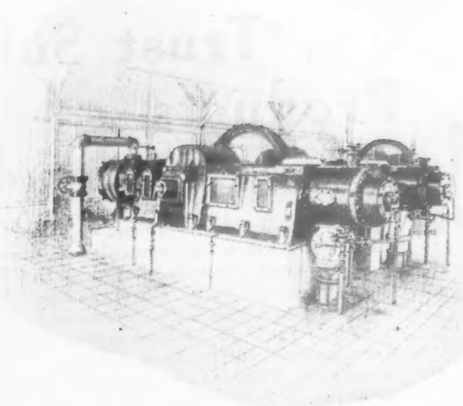

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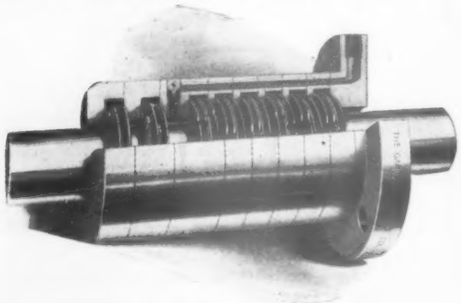

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of Cole field 5 miles, is drilling at 3,530 feet; No. 1 Paige-Garcia, Survey 611, 150 feet from west cor. of Survey 139, is drilling at 2,295 feet. Tress Oil Co.'s No. 1 Billings, Survey 10, is drilling at 2,914 feet. Location is 163 feet from west line and 2,146 feet from south line. Lane-Texas Co.'s No. 1, on city limits of Laredo, is drilling at 2,945 feet. Henne, Winch & Killam, NW, SW, of Survey 43, 150 feet from north and west lines, has been spudded in.

Atascosa County

Witherspoon Oil Co.'s No. 2 Turpe, 2,400 feet southwest of No. 1, is drilling at 2,000 feet. W. G. French, No. 1 Frank Jaksik, 900 feet from west line of farm and 600 feet from south line, is drilling at 2,750 feet.

Bexar County

W. L. McClanahan's No. 2 Sodrok, 300 feet east of No. 1 is resuming at 1,405 feet and will make a deep test. Murphy & Thorklesen, 2,106 feet north of the Corpus Christi road in Bexar County, on Ivan Vick farm, is drilling at 1,530 with formation dry. B. F. Thompson's No. 1 in eastern Bexar County, has been spudded in and is drilling in at 200 feet.

Caldwell County

Fred Adam's No. 2 Kelly, which twisted off at 2,195 feet, has finished fishing and is now drilling at 2,386 feet in chalk. Simms Oil Co. has made location for No. 1 Masur, 5 miles north of Lockhart on Austin road on 302 acre tract, 700 feet from east line and 150 feet from south line. Reiter-Foster Oil Corp.'s No. 1 Riddle is shut down at 500 feet on account of water shortage.

Bastrop County

Johnson Brother's No. 1 Williams, 150 feet from west line is shut down at 1,100 feet because of a broken piston. John T. Storey's No. 1 John T. & A. Storey, Cassiby Survey, 150 feet from south line of survey and 150 feet from southwest line of tract has made location.

De Witt County

Empire Southern Oil Co. has spudded in No. 1 C. G. Smith, west of river and 8 miles southwest of Cuero. Yoro Development Co. has resumed drilling in No. 1 Tom Burns and has been fishing for last 10 days.

Frio County

Wiley Wyatt's No. 2 Fain in Frio County was completed as a water well at 1,265 feet and taken over by land owner; No. 1 R. T. Barnhart 1 mile east of Fain test was abandoned at 900 feet on account of water and being such a small hole; 1 mile southwest of Barnhart test and 1 mile west of Fain location, Wyatt has spudded in on his third test on land owned in fee.

Goliad County

Houston Oil Co., 1,000 feet from old well, is at gas sand depth in No. 1 J. M. Pettus.

Gonzales County

Scott & Kercheval's No. 1 Billings near Smiley is setting casing, total depth 1,182 feet. Martin Oil & Development Co.'s No. 1 Preston, near Cheapside, drilled through gumbo at 1,330-55, and has sand at 1,355-75 feet showing gas and oil. Driller thinks its a well.

Guadalupe County

J. M. Davis' No. 1 Rosenbrock, Payne & Bond Block, has been abandoned at 1,400 feet.

Jim Wells County

Roxana Petroleum Corp., has leased 26,000 acres between Alice and San Diego and is using the seismograph.

Karnes County

Earl B. Reynold's No. 2 Butler, 1,000 feet south of No. 1 is waiting on fuel at 1,917 feet. Has had a showing of oil and is ready to set casing and test.

Kleberg County

Humble Oil & Refining Co.'s No. C-1 Dennett, 360 feet east of B-1 Dennet, and 450 feet northeast of Kleberg No. 2, is drilling at 1,050 feet; No. B-1 Dennett has set and cemented casing at 2,040 feet and is preparing to drill in.

LaSalle County

DeLange, Eiser Development Co.'s No. 1 Fee, Survey 102, at 1,473 feet is in hard packed sand and pyrites in base of Yeagua.

Medina County

In the Ina field in Medina County Arnett Oil Co.'s No. 4 Nixon, 2,100 feet southeast of No. 3, is bailing and getting a little oil. In the Adams field, Lewis & Feltner is Survey 8, has made location 150 feet south of center of north line. Western Gas & Fuel Co.'s No. 1 Adams, 600 feet from north line and 200 feet from the west line, made a 2 to 3-bbl. well at 1,021 feet. Sprague and other's No. 1 Redus, Survey 92, 3,500 feet north of No. 1 Howard, is bailing. Witherspoon Oil Co.'s No. 1 Adams came in a gas well with drill stem in hole. Well is uncased. Boiler is being moved back. Well is to be mudded off and casing set. J. H. Gray and other's No. 1 Mary Neumann, Survey 16, NE, cor., has derrick going up. Schermerhorn Oil Co.'s No. 1 Jungmann is pumping 2 to 3 bbls. from chalk and not Edwards or Serpentine as first supposed. No. 4 irrigation company land, 300 feet east of No. 1 Jungmann, has set casing at 1,597 feet and is moving on cable tool rig to drill in. Alamo Drilling & Leasing Co.'s No. 1 Kenedy, Survey 412, 1 mile east of the county line, south of Sabinal road, is standing waiting for water.

Maverick County

I. N. Beicourt, near Darling north of Eagle Pass, is preparing to drill. Charles Lindenborne is to start drilling soon near Eagle Pass. Rycade Oil Co.'s No. 1 Chittim, 17 miles from Eagle Pass, is drilling at approximately 5,000 feet No. 1 D. Sullivan, I. & G. N. Ry. Survey, Block 7, is drilling at 2,500 feet.

McMullen County

Healdton Oil & Gas Co., Survey 31, southwest quarter of survey, has derrick up and rig on the ground ready to spud in. Houston Gulf Gas Co. is drilling at 500 feet in No. 5 Jacobs. Coyle-Concord Oil Co., 18 miles south of Fowlerton, in southern part of Mat Martin ranch, is drilling at 1,310 feet.

Wilson County

Humble Oil & Refining Co.'s No. 1 D. A. Sellers, 7½ miles northeast of Floresville, Joseph Reynolds Survey, is drilling at below 2,300 feet. Rosalie Oil Co.'s No. 2 H. F. Denning, C. W. Parrott Survey, 660 feet from north line and 250 feet from the east line, is bailing oil at 2,165 feet, but having trouble with water.

Williamson County

Amerada Petroleum Corp.'s No. 1 G. M. Kuykendall, 13 miles east of Taylor on 300 acre tract has derrick up.

Zapata County

Earl K. Bateman is drilling at 2,200 feet in No. 1 Garcia, Block 7, Survey 617, in center of Zapata County. Magnolia Petroleum Co.'s No. 1 R. Cueller, Survey 278, 150 feet from north line and 2,260 feet from east line, is drilling at 3,000 feet. Maurer & Duggan, 150 feet from northwest line and 930 feet from southwest line, in Survey 244, in No. 3 Cueller, is in sand at 1,407-14 feet. The Texas Company, south of No. 1, in No. 3 Jennings in Cerrito Blanco Survey, is coring at 3,904 feet.

LOUISIANA WILDCATS

(Continued from Page 49)

dell, Section 9-18-13, cored salt water sand at 2,280-82 feet and is drilling ahead. Owens and associates' No. 1 Duke, Section 6-17-16, is a rig. Peer Oil Corp.'s No. 1 Hollis, Section 36-18-12, made 480 feet of hole last week and was forced into a shutdown at 1,680 feet for fuel. Simms Oil Co. and Sun Oil Co.'s No. 1 Simmons, Section 9-18-13, is flowing 2,000 bbls. of salt water from 2,944 feet and no oil. Four and one-half inch casing with a perforated liner was set on bottom at 2,936 feet. The test had white sand at 2,939-44 feet. A. H. Stoltz' No. 1 Wait, Section 4-18-16, is being cored at 2,610 feet. Tharpe and associates' No. 1 Peck, Section 22-18-13, is shut down at 1,550 feet for water. The drill stem was lost at 2,650 feet at Wingfield and associates' No. 1 McGough, Section 22-17-13. A derrick is being

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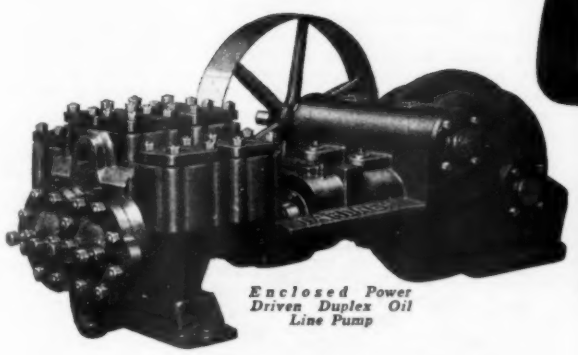
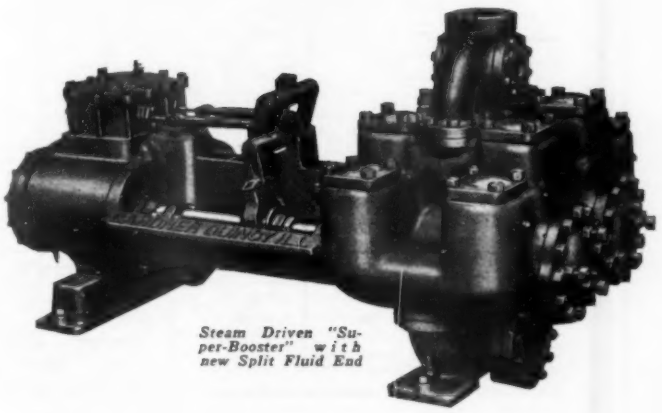
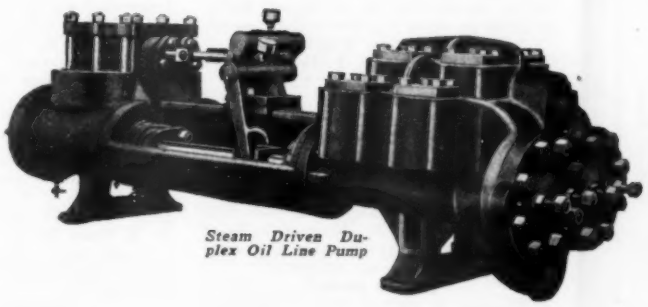


Enclosed Power Driven Duplex Oil Line Pump



Steam Driven "Super-Booster" with new Split Fluid End



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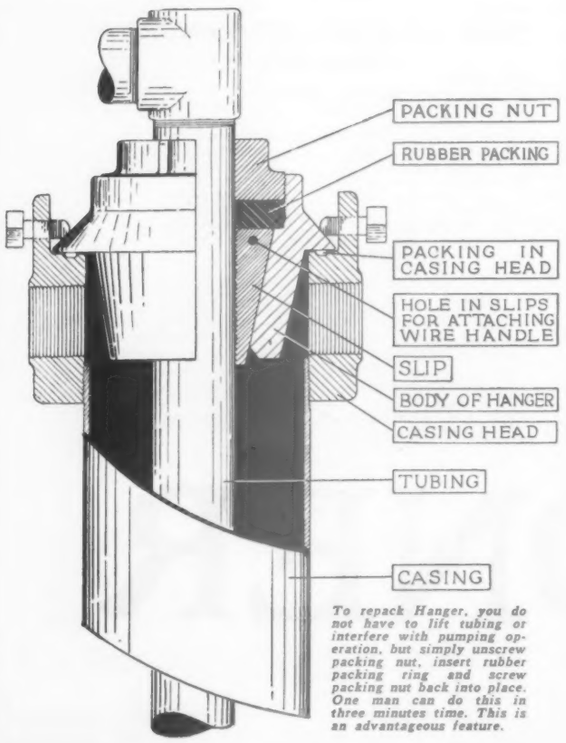

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built for the same operators' No. 1 Morrison, Section 3-19-13.

Bradley County

Arkansas Fuel Oil Co.'s No. 1 Arkansas Timber Co., Section 25-16-12, is a derrick pattern. Magnolia Petroleum Co.'s No. 1 Arkansas Lumber Co., Section 33-15-11, is drilling salt water sand at 3,030 feet. McMurray and associates' No. 1 Southern Lumber Co., Section 7-15-11, is being cored at 3,205 feet. Phillips Petroleum Co.'s No. 1 Arkansas Lumber Co., Section 36-16-11, is being delayed by a fishing job at 1,620 feet. Wingfield and associates' No. 1 Arkansas Lumber Co., Section 2-16-12, is drilling hard sandy lime at 2,935 feet.

Calhoun County

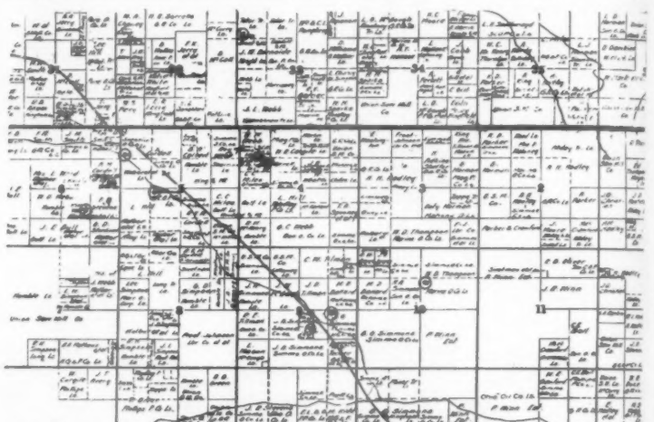
Delmar Oil Co.'s No. 1 Guibar, Section 16-11-14, was abandoned in red beds at 3,005 feet without a test.

Jefferson County

Decem Oil Co.'s No. 1 Hinsley, Section 7-3-10, is shut down at 2,560 feet.

Lafayette County

Arkansas Fuel Oil Co.'s No. 5 Allen in the erratic Bradley Pool, Section 18-19-24, topped the Blossom at 2,786 feet and penetrated it 2 feet and is waiting for



Map showing a portion of the Lawson area in Arkansas.

a standard rig. Kensaw Petroleum Co.'s No. 3, Section 3-20-24, tested salt water at 2,840 feet and is a hole full of water.

Little River County

Mellick Oil Co.'s No. 1 Hawkins, Section 10-11-31, is drilling at 1,925 feet.

Miller County

Lenz and associates' No. 2 Dale, SW cor. Section 26-15-26, set 10-inch at 100 feet and the test is drilling at 350 feet.

Bienville Parish

A derrick is up for Kenebrough and associates' No. 1 Cargle, NE cor. NW SW, Section 27-15-8. Six-inch is being set at 2,548 feet at Woodley & Collins' No. 1 Thomas, Section 23-16-10.

Bossier Parish

Woodley & Collins' No. 1 Roberson, Section 22-23-12, is being rigged.

Caldwell Parish

Roxana Petroleum Corp.'s No. 1 Louisiana Central, Section 22-12-3e, is drilling at 1,436 feet. A rig is up for Southern Crude Oil Purchasing Co.'s No. 1-A Caldwell Lumber Co., 358 feet west and 503 feet south, NE cor. SE, Section 23-13-5e. E. V. Wenzell's No. 1 Caldwell Lumber Co., 200 feet south and 150 feet east, NW cor. NE SW, Section 22-14-4e, is a rig. The location was formerly Kinsey & Jones' No. 1 Shaw.

Claiborne Parish

George T. Shaw and O. C. Rush's No. 1 King, Section 20-21-8, was dry and abandoned at 2,255 feet. Gilliland Oil Co. and Ramsey's No. 1-D Taylor, Section 14-23-8, is drilling limy shale at 4,762 feet. Ohio Oil Co.'s No. 9 Milner, Section 22-23-8, has spudded.

DeSoto Parish

Another blow to deep tests in DeSoto Parish was delivered when Magnolia Petroleum Co.'s No. 1 Bond, Section 27-12-11, was abandoned at 4,135 feet. Snapp and associates's No. 1 Flores, Section 27-11-11, has 4 feet of broken sand at 2,785-89 feet and is shut down for a bailing line. The Texas Company's No. 11-A Wemple, Section 2-12-12, is drilling at 1,398 feet.

East Carroll Parish

The hole was junked at 1,494 feet at T. A. Snell's No. 1 Garden Home Co., Section 34-20-12e, and the rig skidded southwest for the second hole.

Franklin Parish

Ten-inch casing was set at 68 feet at R. W. Williams and associates' No. 1 Lemon, Section 17-14-8e, and the test is drilling at 100 feet.

Grant Parish

Gulf company's No. 2 Swope, Section 17-9-1e, in the Georgetown area, started off flowing 75 bbls. of fluid, 15 per cent salt water, from sand at 1,607-10 feet and flowed at that rate for 12 hours be-

fore sanding up. The test is being bailed. Holmes and associates' No. 1 Holmes, Section 17-9-1e, formerly reported as No. 3, is a derrick. H. L. Hunt's No. 1 Matthews, Section 15-9-1e, tested salt water with a show of oil at 1,554-58 feet and is waiting for orders. Keen & Woolf's No. 1 Rider, Section 16-9-1e, is drilling rock at 1,660 feet.

Jackson Parish

Charles A. Ferguson's No. 1 Martin, Section 5-15-1e, is coring limy shale at 2,885 feet. El Dorado Chief Oil Co.'s No. 1 Jones, Section 3-14-4w, is drilling at 2,605 feet. Grigsby & Co.'s No. 1 Adams, Section 23-17-4w, is shut down at 2,400 feet.

Lincoln Parish

Arkansas Fuel Oil Co.'s No. 1 Nobles, 200 feet south and east NW cor. Section 18-19-3w, is a derrick. Buckley & Palmer's No. 1 Davis, Section 12-20-3w, is drilling shale at 2,615 feet.

Natchitoches Parish

Three Caldwell-Angelina flexure tests in Natchitoches Parish went down as failures last week. Clem Clarke's No. 1 Prudhome, Section 96-8-6w, was dry and abandoned at 1,604 feet. Weaver Brothers Lumber Co.'s No. 1 fee, Section 4-7-7, was dry and abandoned at 2,420 feet. Humble Oil & Refining Co.'s No. 1 Nona Roge, Section 85-7-6, was dry and abandoned at 1,843 feet. Brothers and associates' No. 1 Cockfield, Section 78-7-5w, is shut down at 1,865 feet. Davison and associates' No. 1 L. L. L. L. Co.,

Section 21-7-9, is drilling at 2,031 feet. Edwin J. Forrest's No. 2 Ayers, Section 3-13-7, is shut down at 1,900 feet. Gulf company's No. 1-A L. L. L. L. Co., Section 39-7-7, is drilling at 1,400 feet. A derrick is being built for Humble company's No. 1 Person, Section 46-8-6. McCormick and associates' No. 1 Russell, Section 41-10-7, is coring sandy shale at 951 feet, corrected depth. Ohio company's No. 2 L. L. L. L. Co., Section 20-8-8w, is being rigged. Eddie Self's No. 1 Fisher, Section 18-8-9w, is drilling at 1,635 feet. The Texas Company's No. 1 Moss, 1,070 feet west and 200 feet south, center Section 31-7-6, is a rig.

Rapides Parish

Hincey & Macke's No. 1 Barrow, Section 29-5-2e, is drilling gumbo at 2,700 feet. Love and associates' No. 1 Voda, Section 12-4-1e, is drilling at 1,653 feet.

Richland Parish

Roxana Petroleum Corp.'s No. 1 Tensas Delta, Section 3-14-5e, was dry and abandoned at 2,011 feet. Gulf Refining Co.'s No. 1 England, Section 32-17-6e, is drilling gumbo at 1,135 feet. Gulf company's No. 1 Ches-Wyman, Section 23-18-8e, is shut down in hard blue shale at 2,595 feet for boiler repairs. Roxana corporation's No. 1 Humble Brothers, Section 10-14-6, is a rig.

Sabine Parish

L. M. Emlet's No. 5 Bowman, Section 9-7-12, is shut down at 4070 feet. Godchaux's No. 1 Nona Mills, Section 12-4-13, started up last week but was shut down at 480 feet until titles are cured. Magnolia company's No. 1 L. L. L. L. Co., Section 11-6-11, is shut down at 1,670 feet for a core barrel.

Winn Parish

Winn Parish swelled the flexure dry hole list with three last week. J. H. Hall's No. 1 Eagles, Section 6-10-2w, was dry and abandoned at 1,050 feet. Cherokee Petroleum Co.'s No. 1 Urania, Section 13-11-1e, was dry and abandoned at 1,740 feet. Cedar Creek Petroleum Co.'s No. 1 Sullivan, Section 6-10-2w, was dry and abandoned at 1,700 feet. Allen Drilling Co.'s No. 1 Sanders, Section 21-13-2w, is shut down at 1,511 feet. Dodge & Cordell's No. 1 Tremont, Section 35-13-3w, is being rigged. Humble company's No. 15-A L. & A., Section 28-9-3w, is drilling at 887 feet. J. C. Long did not stop for a test at 445 feet at No. 1 Milam, Section 28-13-3w, where it was claimed an oil show was had and the test is drilling ahead at 540 feet; Ohio Oil Co.'s No. 2 Edenborn, Section 4-12-1w, is drilling hard lime at 2,526 feet.

LaSalle Parish

Cherokee Petroleum Co.'s No. 3 Louisiana Central, Section 33-10-3e, was dry and abandoned at 1,805 feet. Tunica Petroleum Co.'s No. 12-A L. & A., Section 17-7-3e, is drilling at 2,270 feet. Tunica company's No. 13-A L. & A., Section 25-8-1e, is shut down at 1,650 feet for boiler repairs.

CANADIAN FIELDS

(Continued from Page 54)

possible to secure ordinary commercial markets for the production. Even a large production of 73 gravity crude naphtha might create a difficult marketing problem.

The situation has given some concern to officials of Imperial Oil, Ltd., a number of whom recently visited the field to inspect the work at close range. Imperial Oil, Ltd., is interested in the field through two subsidiaries, the Royalite Oil Co. and the Dalhousie Oil Co. At the time of the inspection, Dr. O. B. Hopkins, chief geologist of Imperial Oil, Ltd., said:

"I don't think there is much chance of developing in the Turner Valley a heavy type of crude oil. We might get a little heavier type of naphtha lower down the structure, which is indicated by the naphtha of McLeod No. 2 well. The McLeod naphtha runs about 65 gravity, compared to the 73 gravity of the Royalite No. 4. It is possible that by going a little lower down the dip than McLeod No. 2 a little heavier type of naphtha than the 65 gravity might be found, but I doubt if there is any possibility of getting a heavy type of crude oil on that structure."

At the same time, A. M. McQueen, vice president of Imperial Oil, Ltd., stated that what is needed is a crude lying somewhere between the crude naphtha of the Turner Valley and the low grade asphaltic oil of the Wainwright Field. At the present time the high grade naphtha from Royalite No. 4 is sufficient in quantity to saturate the demand of the company's refineries at Regina, Calgary and Vancouver, where it is blended with other oils to produce commercial gasoline. With more wells producing naphtha, the question would arise of disposing of the production in world markets.

Prospect of Light Crude

A prospect of light crude oil in the Turner Valley Field is indicated by a strike of light oil in the Dakota sand in Home Oil Co. No. 1, LSD 10, Section 20-19-2w5. This test encountered light crude at three horizons in the Dakota, the lowest and most productive at 2,110 feet, with an estimated potential production of 25 bbls. a day or better. Similar shows have been met in other wells in the Turner Valley Field, but this is the nearest approach to commercial production at the shallow depth, and while the Home well is being continued as a deep test of the Madison limestone, additional drilling will be carried on to test the commercial possibilities of the Dakota sand. Advance Oil Co. No. 2, LSD 14, Section 20-19-2w5, drilling close to the Home, has already got the first oil sand in the Dakota and will be made a test of that formation.

Outside these wells, no important results have been secured this year in the Turner Valley drilling. A recent summary of the work in this field shows seven tests drilling below 3,000 feet, all of which may be taken to the producing horizon in the deep lime this season. There are 12 wells actively drilling in the upper horizons, some of them fairly close to 3,000 feet. In addition, the field has three tests inactive, two abandoned, and six rated as productive, apart from the McLeod No. 2, Illinois-Alberta and Vulcan wells, which are in production but not completed. There has been marked activity in locations, no less than 64 being listed, on some of which derricks are up or some preliminary work has been done. How much work will be done on these wells will doubtless be determined by the results secured from the tests now drilling, but in any event they will not do much drilling this season.

A noteworthy feature with this season's work has been the rapid time made on most of the wells. At the time of the first Calgary boom in 1913-14, the field became a proverb for difficult drilling, frequent fishing jobs and heavy drilling costs. With the newer wells, better time is being made and there are fewer accidents. Great West Oil Co., now down 4,665 feet, made 3,800 feet with a contract job in a little over three months. Cooper-Nanton No. 1 went down 3,000 feet in six weeks. In its nearly 5,000 feet of drilling, Vulcan Oils, Ltd., the deepest hole in the field, had very few accidents. Great West No. 1 is reputed to have the longest string of 10-inch casing in the field, 3,800 feet. Cable tools are still generally used, though Illinois-Alberta Oil & Refining Co. is finishing its test in the Madison lime with a diamond drill, the first to be used in the Turner Valley Field.

Irma-Wainwright Field

In the Irma-Wainwright Field, the season's work has been rather disappointing, in view of the very fair start made in 1924 and 1925. British Petroleums, Ltd., the pioneer company, has been almost entirely inactive, though it has heavy crude production in two or three of its five finished wells. Edmonton-Wainwright Oils, LSD 4, Section 29-45-6w4, got a fair production of heavy crude early in the year and is the best well in the field. Western Consolidated No. 2, Section 30-45-6w5, is now drilling in a producer at 2,231 feet, and Emerald Oils, LSD 8, Section 30-45-6w4, after failing to get commercial production at the usual heavy crude horizons is being carried down in the hope of getting lighter oil.

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Some crude has been shipped to the Alberta Refineries at Edmonton, and some is being sold unrefined for fuel oil, but operators are still hoping to get something lighter than the 12 to 18 gravity crude. A survey of the Wainwright Field shows 9 completed wells, 5 producing either oil or gas in commercial quantities, though some have developed water troubles; 1 well finishing, one shut down unfinished, 4 drilling and 22 locations, on some of which tests have been partly rigged up. To these may be added the Irma Oil Development Co. test near Irma, now being finished by the Western Consolidated, which will probably finish a gasser.

Ribstone-Blackfoot

Further east, the Ribstone-Blackfoot structure has attracted considerable attention, in view of the optimistic report of Dr. G. S. Hume of the Geological Survey. Three tests are drilling in this area, and six locations are spotted, with additional work in prospect if the results of the drilling now under way prove encouraging.

Outside the Royalite and Dalhousie tests in the Turner Valley, Imperial Oil, Ltd., is directly interested in isolated tests in a number of areas in Alberta. The year has been marked by the abandonment of its second deep test on the Coalspur structure in the foothills west of Edmonton, after reaching 3,970 feet depth. No new work is being undertaken in this section of the foothills.

To the south, Imperial Oil, Ltd., is drilling at Rice Creek, in the foothills west of Nanton, what is now the deepest test in Alberta. Imperial-Rice Creek is down below 5,000 feet. West of Calgary, in the Jumping Pound district, Imperial-Bow River No. 1 is another test of the foothills, now drilling close to 4,000 feet with a small gas production. A third foothill area in the Highwood district is being tested by Imperial-Highwood No. 1, which is still in the upper horizon

Imperial Oil, Ltd., is also drilling two tests in southern Alberta, Imperial-Erickson Coulee No. 1, east of Coutts and close to the international boundary, being down about 2,500 feet, while Imperial-Burdett No. 1, Section 8-11-11w4, a test of the lower horizons of the Bow Island Field, is below 2,700 feet.

Isolated Tests

Of a number of isolated tests in various parts of Alberta, the most significant is that being drilled by International Oils in Section 14-74-4w5, at Lesser Slave Lake, northern Alberta. This test a few days ago got a showing of oil and gas at 1,070 feet and about 200,000 feet of gas at 1,090 feet, with fair prospects for oil a little deeper in the sand. The 10-inch casing has been carried to the bottom of the hole.

At Fort Vermilion, on the Upper Peace, the Black Rock Petroleum Co. is close to 800 feet, with some showings of gas. In Acadia Valley, Fuego Oils, Ltd., Section 34-25-4w4, has done some drilling and is close to 2,400 feet.

In the Border Fields, Urban Oils, Ltd., Setcion 4-1-15w4, close to Coutts, is drilling at 3,063 feet, with traces of oil. Devenish Petroleums, LSD 5, Section 27-5-14w4, has shut off a 30,000-bbl. flow of artesian water struck at 725 feet, and is cementing the 15-inch casing preparatory to drilling deeper.

The Moose Mountain Field, near Calgary, has three tests drilling, one shut down, and one rigging up. Apart from the Roth deep test, neither the Medicine Hat Field nor the Many Island Lake Field to the northeast has reported much activity this season. In the Aldersyde district south of Calgary two locations have been made, but no work has yet been done on them. Near Drumheller a test is reported rrigging up, while on the Sinclair structure there are four locations listed and one in the Springbank district. The revival of interest in the Turner Valley, following the strike of wet gas and crude naphtha in the Madison lime, has been followed by considerable leasing in these outlying districts, but actual drilling in these areas is to some extent contingent on the success of operations now under way in the main field.

Outside Alberta, the outstanding feature of the last few monthe has been the big strike near Vera, Sask., by the Unity Valley Oil & Gas Co., drilling in Section 23-41-24w3. Estimated as high as 10,000,000 feet a day, this is the first commercial production of natural gas in Saskatchewan, but the test is being carried deeper for oil. It has led to some drilling activity in other parts of the province.

In the Ontario Fields in Lambton County, Union Natural Gas Co., after finishing two dry holes in Dawn Township, has located No. 13 test on the Dan Tyrrell farm, as a test of the Dawn gas sand. In Kent County the same company has located No. 260 on the Truckenbrod farm near Port Alma as a test of the Tilbury sand.

It is reported that R. L. Barr & Co. of Detroit are drilling two deep tests in Middlesex County, north of Strathroy. In York County a test drilled by James Wilson and George Bennett at Oak Ridges, north of Toronto, is reported to have finished a dry hole.

CALIFORNIA FIELDS

(Continued from Page 56)

scratched that area removed from competitive drilling.

Long Beach

There were no developments of interest in the Long Beach Field, with the exception of the abandonment of two or three wells. Fred Fitch has given up the idea of picking up an eastern extension, and the hole, which did not show a single favorable indication, is being abandoned as a duster at 4,685 feet. The Julian Petroleum is filing an abandonment notice on No. 1 Rappaport at 4,725 feet, due to a complicated fishing job and the unfavorable outlook. Walter P. Temple failed to pick up a third producing horizon in the northwest extension, and when the well did not make the grade in either the first or second sand it was listed for abandonment. The Pan American's No. 2 Chainey in the older section is still in the oil sand at 5,400 feet and will likely be given a test during the next 10 days.

Rigs are going up for two new wells to be carried down to the 3,000-foot gas zone in the northwest extension, and both will be spudded in within two weeks. Ahlburg & Evans and the Reliance Home Development are the operators just getting under way, and they hope to duplicate the gas well recently finished by the Northwest Gasoline Co., which is making approximately 1,500,000 feet daily. There are about six wells scheduled to tap this gas zone in the near future. The city of Long Beach has collected a total of $4,468,902.16 in oil and gas royalties which have accrued as a result of development of municipal properties by the Jergins and Ramsey interests since the opening up of the Long Beach Field by the Shell company in 1921. The city's revenue for the fiscal year ending June 30 amounted to $1,221,404.47, and it is expected the income for the 1926-27 period will be in the neighborhood of $1,000,000.

Rosecrans

The Union finished a nice flowing well in the Rosecrans Field when No. 27 Howard Park was put on production from 5,068 feet. It started off making a little less than 700 bbls. a day, the oil being clean and testing 34.2 degrees. The Union has two other drillers on this property, in which the Barnsdall has a participating interest, but due to the fact that they have another few hundred feet to go, it will probably be 30 days before they will be in a position to make a bid for production. The Barnsdall had the misfortune to run into two fishing jobs in Nos. 13 and 14 on the O'Dea lease at a time when both were nearing completion. The former made a preliminary flow several weeks ago, but it did not come up to expectations and the company immediately resumed drilling.

The Star Petroleum, after a series of production tests, has discontinued the attempt to bring in No. 1 Bolson, and the well is being listed for abandonment at 4,681 feet. The California Petroleum is also charging off a little item of some-

where around $100,000, due to the fact that its No. 1 Kreitz has ceased to be a commercial producer. This well probably never returned the initial cost of drilling. The Julian Petroleum spudded in No. 1 Mosier a short time ago, and this outpost, located west of the northern part of the field, is standing cemented at 790 feet. The Big Five Oil Co. has just passed the 4,000-foot level in its No. 2 Cole, in the extreme eastern part of the field, and, although the General Petroleum's No. 4 Vaughn, nearby, is about 300 feet higher, it is believed both will come into production at about the same time.

One new well and one recompletion were finished in the Inglewood Field, the former being the Standard's No. 7 Stocker and the latter the Associated's No. 43 Vickers. The Standard's new well is pumping 120 bbls. of 16.1 gravity oil daily from 1,957 feet and, while the output is cutting approximately 5 per cent, it may clean up in time. The Associated's workover, No. 43 Vickers, was a much more satisfactory well both from a quantity and quality standpoint. This hole, upon being cleaned out to bottom, 2,228 feet, and returned to production, yielded 290 bbls. of 16.1 gravity oil cutting a little less than 2 per cent. The Standard's No. 71 Pacific, a new well standing cemented at 1,557 feet, is the only incompleted drilling project at present, although there are several former producers being worked over.

Seal Beach

Unusually rapid footage is being made in the several wells already under way at Seal Beach, and two or three may be on production shortly after November 1. No. 2 San Gabriel of the Standard has just passed the 3,000-foot level, while the Marland's No. 3 Bixby is rotating ahead at 3,200 feet. The latter's No. 1 Selover is just rounding 3,300 feet. No. 4 Bixby of the Marland is standing cemented at 1,395 feet but drilling will probably be resumed in a few days. The Standard is driving piles for two more wells, Nos. 1 and 3 on the San Gabriel property, which should be spudded in about October 20. The Associated is pouring concrete for the foundation of its first test to be located on the recently acquired Bryant lease in the eastern part of the field. The Union has suspended drilling in No. 1 Bryant northeast of the Seal Beach Field at 5,565 feet, and it is being listed for abandonment. This well is approximately half a mile north and a little east of the Marland's discovery.

The Standard's No. 19 South Whittier Community is undoubtedly the most important drilling project in the Santa Fe Springs Field, as it may result in the starting of several new wells. This well is standing cemented just above the Bell zone. The company took a core at 3,911 feet and the sand was so well saturated a fairly large flowing well is anticipated. The Standard has several additional undrilled locations on this property, and it is probable several new wells will be started if conditions warrant. Construction work was started on two new rigs, one by the F. W. W. Oil Co. and the other by the Roberts Oil Co., and it is understood both projects will be pushed forward with the Bell sand as their objective.

The Associated recently spudded in No. 5 Dewenter, which will be finished in the Meyer sand, the most prolific of the three zones. In view of the several recent satisfactory completions at Santa Fe Springs, the Associated may finish a 500-bbl. well. The General Petroleum has just finished No. 22 Santa Fe at 3,810 feet, and a 6¼-inch is being run in for an early test. The Chanslor-Canfield Midway Oil Co., discoverer and largest property holder in the Torrance Field, has been concentrating its drilling operations on the Del Amo property and, judging by the number of wells under way and rigs going up, will continue to run three or four strings of tools for several months. The Union is erecting a new rig for No. 15 Callender at Dominguez, but it will probably be another three or four weeks before spud is made, as the company is only doing a small amount of development work in this area.

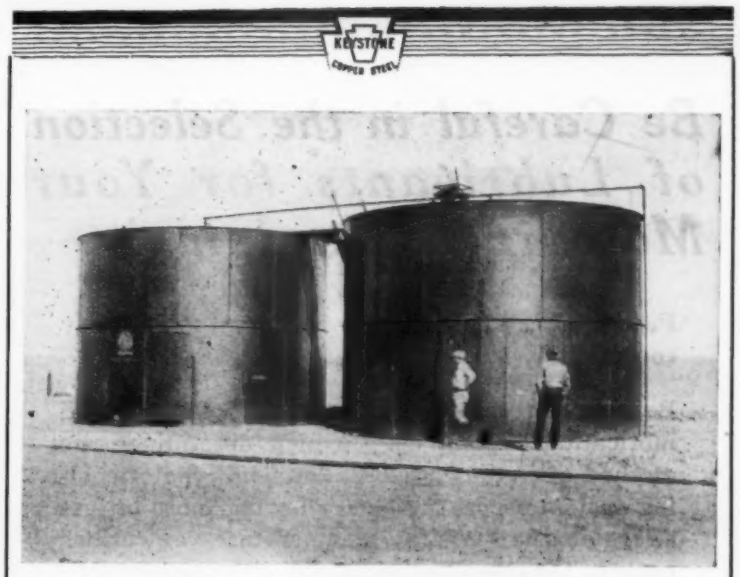
There were no new wells finished in the Fullerton district although the Union succeeded in recompleting No. 65 Stearns after redrilling and deepening it to 3,458 feet. When returned to production, the well started off flowing 985 bbls. of clean 25.9 gravity oil daily. It looks as though the Union's wildcat operations on the Olinda property will not result in either extending the Fullerton district or picking up another field, as the initial test, No. 1 Olinda, was abandoned at 5,309 feet, while No. 2 has already passed the 5,830-foot level. The Union is running 10 or 12 strings in the Richfield and Fullerton districts and will probably continue for several months. The General Petroleum is drilling six wells in the Richfield district and has two more on the Tonner lease at Fullerton, all in proven territory. The Shell has two promising wells nearing completion in Nos. 11 and 13 on the Orange lease at Fullerton, to be given tests from around the 5,000-foot level. No. 5 Pico, also in this area, will probably follow as it has just passed 4,750 feet. The California Petroleum's No. 20 Yarnell was somewhat of a disappointment as it only registered an initial output of 200 bbls. from 4,570 feet. The production test has not been finished and some more work may be done on the hole as it is exhibiting symptoms of water trouble.

The Standard has resumed drilling on No. 1 Benedictine, the most westerly well in the Montebello Field, instead of giving it a test as was expected since it showed considerable promise a few weeks ago. The hole has just passed the 3,600-foot level and the exact completion depth is undetermined. The company is making fairly good progress with No. 4 Howard & Smith, now down 3,130 feet, and while No. 1 Whitehead, west of No. 1 Benedictine, has been standing rigged up several days, actual spud has not been made. The McCaslin Oil Co. finished its second producer, No. 2 Patton-Gregg, in the Rideout Heights section of the old Whittier Field, at 1,217 feet, pumping 72 bbls. of 16.1 gravity oil. No. 1 Chancorina, of the Pan American, in this district, is still being troubled with sand and, while it may be good for 75 bbls. a day, it may take several weeks to get the hole in a satisfactory condition.

Midway-Sunset

The Lewis Petroleum finished a 275-bbl. pumping well in the Midway-Sunset area, Section 6-11-23, when No. 9 was put on the beam at 2,054 feet. No. 8 is being held up with what is believed to be bottom water and a plug will be put in bottom. The Obispo Oil Co.'s No. 11, in Section 32-12-23, a short distance from the company's No. 6, which developed big production in the brown shale a year or so ago, is a distinct disappointment and may eventually be plugged back to the upper sand. No. 11, which was carried down to 3,960 feet, has been pumping about 50 bbls. a day, approximately half water. The Union effected a satisfactory water shut-off in No. 2 Boss, out in the Maricopa flats and drilling has been resumed at 5,100 feet. No. 1 Houchin, nearby, has been plugged back from 5,604 feet to around 5,600 feet, from which depth another test will be made. Four wells were listed for abandonment in the Midway-Sunset area, the Miocene's No. 4 in Section 32-12-23, Honolulu Consolidated's No. 9 in Section 8-32-24, the Standard's No. 37 in Section 31-31-24, and the Standard's No. 35 in Section 31-12-23.

The Union's No. 16 Federal, in the Elk Hills Field, Section 26-30-24, was finished early in the week as a 165-bbl. pumper from 3,586 feet. No. 17 was spudded in upon the completion of No. 16 and 110 feet of hole was made before the close of the week. George F. Getty added another producer on the Kern front by the completion of No. 6 Tegeler, pumping 110 bbls. of 14.9 gravity oil from 2,460 feet. The Shell finished No. 2 Vedder, in the Mount Poso area, at 1,876 feet and, while the actual gauge is not yet available, it should be good for 250 bbls. a day. The Barnsdall's No. 1 Vedder, in Section 8-27-28, which property adjoins the Shell's holdings in Section 9-27-28, is drilling ahead at 1,200 feet and will probably make a bid for production during the next three weeks. The Barnsdall's No. 1 Vedder, in Section



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20-27-28, is drilling ahead at 1,530 feet in a gray sand and shell which is showing oil in increasing quantities. The Union has just about finished rigging up No. 1 Mack, in Section 5-27-28, and an early spud is anticipated.

Southern California Wildcats

The Associated's No. 1 Cypress, a wildcast west of the Inglewood Field, which developed a rather promising oil sand at 4,040 feet, is still standing cemented but should be drilled out within a day or two, when some idea may be gained as to whether the company will succeed in opening a new oil field at this point. The test looks rather promising, although it may be just a stray sand. The Petroleum Securities is drilling ahead in its Bandini wildcat, No. 1 DeBaker, in a hard sandy shale at 1,300 feet. The Marine Oil Corp. has run in a string of 8¼-inch in its Bellflower wildcat for protection purposes and drilling will be resumed at 5,184 feet. The Union took a core in No. 1 Howland at 5,238 feet but no favorable showings were noted, the prevailing formation being a gray sand.

The Smith Petroleum Co. is drilling ahead in No. 1 Johnson, near Hawthorne, at 4,710 feet and, although a small gas showing is reported, it is of no particular value as the formation is a barren gray sand. The Union's Newhall-Saugus wildcat is rotating ahead in a brown shale streaked with gray sand at 4,180 feet and, while it cannot yet be classified as unfavorable, it would look a good deal more promising if a few minor showings were encountered. The Barnsdall is filing an abandonment notice on No. 1 Merlo, in the Avacado Heights section, near Puente, due to the unfavorable outlook at 4,498 feet. George W. Johnson is building a road that will have material on ground for a test approximately 600 feet northeast of the Marland's No. 1 Wickham, abandoned as a duster several weeks ago. It will be recalled the Marland picked up a fairly good looking sand in No. 1 Wickham but was not successful in shutting off water, which precluded the making of a satisfactory production test.

Sunset Beach

The General Petroleum has already started work on its wildcat to be drilled in the Sunset Beach area on property recently subleased from the Marland and, while it will probably be several weeks before actual spud is made, this delay will not be due to any fault of the company. This particular area requires the building of a substantial road as much of the acreage is tideland, which will not permit the hauling of heavy equipment. The General Petroleum's test will be about 1½ miles northwest of the Standard's No. 23 Bolsa, in the northern part of the Huntington Beach Field. The road, under ordinary conditions, would be under water part of the time and the company will be obliged to throw up dikes on both sides. Considerable piling will be necessary before derrick construction gets under way, as during periods of high tide the location will be under water.

The Standard has cemented a string of 10-inch in No. 1 University, in the San Fernando Valley, at 4,209 feet, but drilling is expected to be resumed during the coming week. No. 1 Sesnon of the Petroleum Securities, in the Reseda-Zelzah area, is rotating ahead in a hard sand at 4,200 feet. No. 1 Community, of the Van Nuys Oil Co., was held up for a few days due to a lost cone but drilling is again under way.

Northern California Wildcats

The Bolsa Chica's test in the Kettleman Hills is still in a somewhat unsatisfactory condition, although the outlook is quite promising. The well has been bothered with a little water condition which has not yet been remedied. Development work in this area may go along rather slowly because the oil is heavy, testing about 17 or 18 degrees and not very desirable from a refining standpoint at present. The Bolsa Chica's well has found three oil sands to the present and if commercial production is not secured from 2,360 feet, drilling will probably be resumed and may find another deeper sand capable of yielding a light refining crude. In any event, this property will warrant development at some future date.

The Marland recovered from the fishing job which has been holding up progress in its Kettleman Hills test, No. 1 Elliott, in Section 12-22-17, and drilling has been resumed. The outlook at 5,600 feet is rather unsatisfactory.

The Federal Drilling Co. did not stop to test out the showings found in No. 1 Kinsella, its Tulare County wildcat, at 2,900 feet, but continued drilling. At 3,250 feet another slight showing of oil and gas is reported and, while the well is not capable of producing at present it is promising. Unconfirmed reports credit the Associated and Shell with acquiring some protective acreage in this vicinity during the past week. The Shell's No. 1 Berylwood, at Moorpark, in Ventura County, did not show any improvement and, while it cannot yet be condemned, it is somewhat discouraging. The Milham's No. 1 Sexton, east of the Ventura Avenue Field, also looks rather unfavorable, as only one or two minor showings have been logged down to 6,190 feet.

The Associated is abandoning its wildcat near Kernan, which has been standing suspended for several months, and will skid the rig to a new location about 1 mile west. The first well was carried down and suspended at 5,735 feet. Several new leases were made early in the week covring prospective oil land in the Goose Lake region southwest of Waco, in Kern County. Hoyt S. Gale secured another 80 acres in Section 15-28-23, on a one-eighth royalty basis but as the property is for protection purposes no immediate work is contemplated. The Exeter Oil Co. took up another 40 acres in the same section from C. W. Bloemer on a one-eighth royalty basis with three years in which to begin work.

TEXAS PANHANDLE AND NORTH TEXAS LOCATIONS

(Continued from Page 44)

W. Survey. Marland Oil Co.'s No. 4 Otis Chalk, 330 feet north and 990 feet west SE cor. Section 113, Block 29, W. & N. W. Survey.

Jones County

Gibson & Johnson's No. 1 John Sears, 660 feet north and west SE cor. north 198.6 acres, south 397.2 acres, west 865.7 acres, Dewitt County School Land, No. 150.

Pecos County

Quinby and others' No. 2 E. W. Bennett, C NW Section 592, Block 105, G. C. & S. F. Railway Survey.

Reagan County

Texon Oil & Land Co.'s No. 6 University Land, Group 1, 150 feet north and 250 feet east SW cor. Section 23, Block 9, University Land.

Sterling County

The California Co.'s No. 1 J. T. Davis, Lease 1, 330 feet north and 2,476 feet west of middle east line Section 255, Block 2, H. & T. C. Survey.

Upton County

Atlantic Oil Production Co.'s No. 1 J. H. Shirk, 330 feet south and west NE cor. north half SW Section 35, Block 1, M. K. & T. Railway Survey. Dixie Oil Co.'s No. 9 A. S. Burleson, 330 feet south and 960 feet west NE cor. 160-acre lease out of Thomas C. Jones Survey, No. 100, A-746; No. 10, 330 feet south and 1,620 feet west NE cor. same 160-acre lease. Marland Oil Co. and others' No. 1 University Land, center SW Section 21, Block 4, University Land. Marland Oil Co.'s No. 6 B. H. Estep, 900 feet north and 330 feet east SW cor. SE Section 18, Block 3, M. K. & T. Railway Survey; No. 7, 990 feet north and east SW cor. SE Section 18, Block 3, same survey; No. 8, 990 feet north and west SE cor. Section 18, Block 3, same survey. Independent Oil & Gas Co.'s No. 5-A S. Burleson, 330 feet south and 865 feet west NE cor. 160-acre lease Thomas C. Jones Survey, No. 100, A-746; No. 6 E. Wooley, 2,500 feet SE of NW cor. William Teer Survey, No. 4, A-806, and 330 feet SW NE line Section 3, G. C. & S. F. Railway Survey, A-229, and located in Section 3, G. C. & S. F. Railway Survey; No. 7, 3,100 feet SE NW cor. William Teer Survey, No. 4, A-806, and 330 feet SW NE line, Section 3, G. C. & S. F. Railway Survey, A-229, and located

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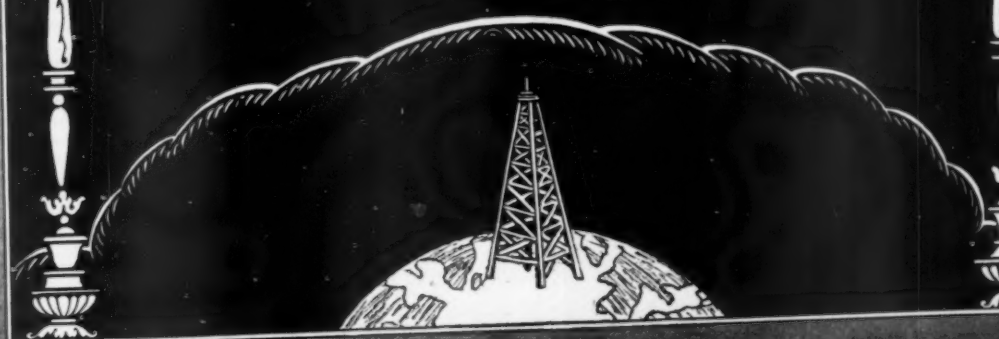


EST. 1830
WALL
WALK LAID
ROPE
TRADE MARK

"Drill With Manila"

Wall Manila Drilling Cables

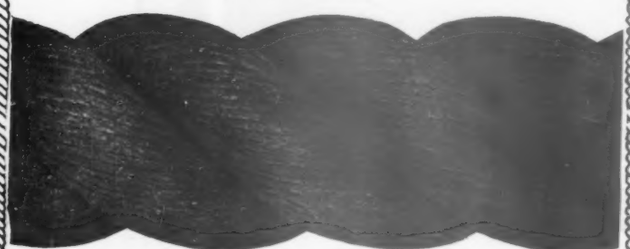
So you'll know:

Sold by

Artesia Supply Company—New Mexico
Baker Sales Company—Oklahoma
The Bovaird Supply Company—Oklahoma, Kansas and Texas
Bovaird & Company—Bradford, Pa.
The Bridgeport Machine Company—Oklahoma, Kansas and Texas
Decker Tool & Supply Company—Texas
The Drillers Supply Company—Kansas
Hinderliter Tool Company—Oklahoma, Kansas and Texas
Murray Tool & Supply Company—Oklahoma, Kansas and Texas
New Martinsville Supply Company—New Martinsville, W. Va.
Petroleum Specialties Company—Montana and Wyoming
Republic Supply Company—Oklahoma and Texas
Rope & Cordage Company—Parkersburg, W. Va.
Southwest Supply Company
The Staves Supply Company—Kansas
Wagner Supply Company—Texas
Western Supply Company—Oklahoma, Texas
Western Drilling Tool & Supply Company—Kansas

WALL ROPE WORKS, INC.
Established 1830
General Offices: 48 South Street, New York City
Factory: Beverly, New Jersey
Oil Field Branch: Bartlesville, Okla.
Stocks throughout the oil fields

Pure Manila Bull Ropes
(Walk Laid)



Worthy of Trust

in same section; No. 8, 3,461 feet SE NW cor. William Teer Survey, No. 4, A-806, and 160 feet SW of NE line, Section 3, G. C. & S. F. Railway Survey, A-229, and located in same survey. Roxana Petroleum Corp.'s No. 3 B. H. Estep, 990 feet north and 330 feet west SE cor. Section 18, Block 3, M. K. & T. Survey.

NORTH CENTRAL TEXAS

Archer County

Magnolia Petroleum Co.'s No. 1 Miss May Rutty-B, 750 feet south and 150 feet west NE cor. west half Miss May Rutty 160-acre tract out of J. T. O'Reilly Survey, No. 24, A-360. Marland Oil Co. and Bass & Dillard's No. 2 J. J. Perkins and others, 150 feet south and east NW cor. W half SE, Section 27, League 3, Denton County School Land, A-117. Plains Production Co.'s No. 1 L. C. Peace Estate, 150 feet south and east NW cor. east half J. W. Snell Survey, A-386. Ray & Maddie's No. 1 S. G. Helm, 150 feet north and west SE cor. west 95.78 acres, south 150,78 acres S. G. Helm 310-acre tract out of Section "D" Club Ranch Subdivision P. Trahan and others' No. 1 G. T. Netherton, 150 feet south and west NE cor. west half SW Section 104, A. T. N. C. L. Survey. W. C. Young's No. 1 W. P. Ferguson, 150 feet south and west NE cor. Lot 3, S. P. Railway Survey, No. 1 A-416. Golding & Cochran's No. 2 H. L. Morrison, 150 feet north and east SW cor. Lot 16, Crawford Subdivision I. Holman Survey, A-162. Humble Oil & Refining Co.'s No. 18 G. B. Hamilton, 150 feet south and east NE cor. Lot 2, and located in Lot 1, same survey. Magnolia Petroleum Co.'s No. 1 C. E. Graham, 150 feet south and east NW cor. SE Boling C. North Survey, A-327; No. 4 L. L. Hudson, 150 feet south and 1,300 feet west NE cor. south 93.7 acres, Section 80, Club Ranch Subdivision; No. 9 I. C. Little and others, 450 feet south and west NE cor. 100-acre lease I. Holman Survey, A-162; No. 25 A. J. Lowe, 150 feet south and 450 feet west NE cor. Lot 2, Crawford Subdivision, I. Holman Survey, A-162. Moore & McVelia's No. 1 Abercrombie & Taylor, 450 feet south and 509 feet west NE cor. Section 15, Club Ranch Subdivision. Murchison & Fain's No. 5 W. J. Logan-B, 415 feet north and 1,500 feet west SE cor. their 160-acre lease "B" Allison Arms Survey, A-5.

Brown County

Amerada Petroleum Corp.'s No. 2 J. H. Fry, 480 feet south and 150 feet east NW cor. south 75 acres, west 95 acres of north half George Stubblefield Survey, No. 622; No. 3, 1,050 feet south and 150 feet east NW cor. their 75-acre lease, north half George Stubblefield Survey, No. 622. W. R. Bowen and others' No. 1 Mrs. T. S. Williams, 3,200 feet south and 2,150 feet east NW cor. of Edmund Pruett Survey, No. 135, being 150 feet north and east SW cor. 34.5-acre lease. J. S. Cosden's No. 3 R. L. Westerman, 150 feet north and 750 feet west SE cor. R. L. Westerman 172.5-acre tract N. B. Mitchell Survey, No. 150. Curry & Moore's No. 2 Mrs. T. S. Williams, 150 feet south and east NW cor. Mrs. T. S. Williams 65-acre tract E. T. Railway Survey No. 157; No. 8 W. M. Wooldridge, 150 feet south and west NE cor. their 30-acre lease, same survey. Gilman and others' No. 1 J. M. Fry, 150 feet south and east NW cor. J. M. Perry 160-acre tract, J. G. Rhea Survey, No. 36. Gilman & McMurray's No. 9 J. M. Moore, 150 feet south and west NE cor. J. M. Moore 100-acre tract W. B. Smith Survey, No. 155; No. 12 A. B. Teston, 150 feet north and west SE cor. A. B. Teston 136-acre tract out of same survey. Huber and others' No. 1 W. H. Kuteman, 150 feet north and east SW cor. W. H. Kuteman 200-acre tract Mrs. J. M. Harris Survey, No. 784. P. L. Huffman's No. 6 Kilgore Brothers, 150 feet north and 450 feet east SW cor. east half Hugh McClure Survey, No. 152. Humble Oil & Refining Co.'s No. 1 J. H. Fry, 150 feet north and east SW cor. north 20 acres, west 95 acres, north half George Stubblefield Survey, No. 622; No. 5 M. E. Fry, 450 feet north and 150 feet west SE cor. 50-acre lease out of Jesse Chaudoin Survey, No. 621; No. 5 W. M. Wooldridge, 150 feet south and 750 feet west NE cor. 70-acre lease E. T. Railway Survey, No. 157; No. 5 J. I. Foster, 1,050 feet north and 150 feet east SW cor. east 44 acres, J. I. Foster 110-acre tract out of Thomas Benson Survey, No. 783; No. 6 E. P. and W. H. Kilgore-D, 200 feet south and west NE cor. west 81 acres, Section 2, Juan Delgado Survey, No. 785; No. 7, 200 feet south and 661 feet west NE cor. west 81 acres, Section 2, same survey. Infield Petroleum Co.'s No. 2 Graham Estate, 850 feet north and 2,183 feet west SE cor. Section 3, Jeremiah Brown Survey, No. 137. Kone Production Co.'s No. 7 J. I. Foster, 150 feet north and east SW cor. west 26 acres of J. I. Foster 110-acre tract Thomas Benson Survey, No. 783. Louisiana Oil & Refining Co.'s No. 7 H. H. Henslee, 450 feet south and 750 feet east NW cor. H. H. Henslee 120-acre tract Patrick Curlong Survey, No. 151. Magnolia Petroleum Co.'s No. 3 M. E. Fry, 750 feet south and 150 feet west NE cor. 80-acre lease out of Jesse Chaudoin Survey, No. 621. Phillips Petroleum Co.'s No. 4 J. H. Prather, 150 feet north and 954 feet west SE cor. J. H. Prather 320-acre tract William L. Swain Survey, No. 145; No. 5, 150 feet north and 1,357 feet west SE cor. J. H. Prater same 320-acre tract; No. 6, 150 feet north and 1,754 feet west SE cor. J. H. Prater same 320-acre tract. Prairie Oil & Gas Co.'s No. 9 W. M. Wooldridge, 150 feet north and 1,043 feet west SE cor. 60-acre lease E. T. Railway Survey, No. 157.

Callahan County

Goodloe & Duffy's No. 2 I. N. Jackson, 150 feet north and 1,268 feet west SE cor. Section 118, B. B. B. & C. Survey. Prairie Oil & Gas Co.'s No. 3 H. H. Derrington, 150 feet north and west SE cor. 10-acre lease, W. G. Anderson Survey; No. 8 H. Cunningham, 150 feet north and east SW cor. east half of north half Section 73, Comal County School Land. T. B. Slick's No. 4 L. A. McDonough, 150 feet south and 1,400 feet east NW cor. L. A. McDonough 128-acre tract R. Edwards Survey, No. 778.

Coleman County

Texon Oil & Land Co.'s No. 1 Sealy & Smith, 2,640 feet south and 150 feet west NE cor. Section 45, Block 2, G. H. & H. Survey.

Cooke County

Hooser Oil Co.'s No. 5 J. A. Dennis, 150 feet north and 1,859 feet west SE cor. 160-acre lease T. J. Moss Survey, A-736; No. 6, 150 feet north and 2,150 feet west SE cor. same 160-acre lease; No. 8, 450 feet north and 150 feet east SW cor. same 160-acre lease; No. 9, 750 feet north and 150 feet east SW cor. same 160-acre lease. Sun Oil Co.'s No. 5 Hyman, 150 feet south and 400 feet west NE cor. 47.5-acre lease out of T. J. Moss Survey, A-736.

Dickens County

Moutrey Oil & C. English's No. 1 Jones, 300 feet north and west SE cor. NW, Section 311, Block 1, H. & G. N. Survey; No. 1 Blackwell, C SE, Section 406, Block 1, H. & G. N. Survey.

Haskell County

Ramsey & Maxey's No. 1 J. D. Hughes, 1,600 feet south and 3,200 feet east NW cor. R. M. Williamson Survey, No. 39. Zeigler and others' No. 1 Scott Ranch, 150 feet south and west NE cor. Thomas Bacon Survey, No. 143.

Jack County

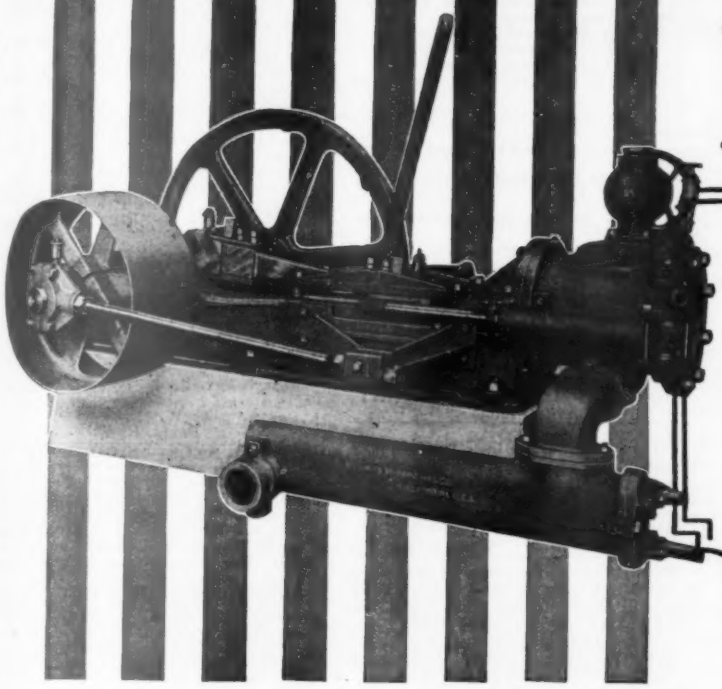
Brentmoor, Inc.'s No. 1 C. A. Roach, 150 feet north and 4,800 feet west SE cor. Ira Coots 200-acre tract and located in C. A. Roach 196-acre tract Mrs. W. Berryman Survey, A-40. Buttram Petroleum Co.'s No. 3 C. K. Cullers, 250 feet north and 1,160 feet west SE cor. NW Samuel Chairs Survey, A-930. Cooper & Goldsmith's No. 1 J. D. Gillespie, 150 feet north and west SE cor. J. D. Gillespie 312-acre tract Mrs. W. Berryman Survey, A-40. Seaboard Oil Co.'s No. 3 C. K. Cullers, 250 feet south and 1,155 feet west NE cor. SW Samuel Chairs Survey, A-930.

Montague County

J. J. Perkins' No. 1 Mrs. M. H. Salmon and others, 1,170 feet south and 1,301

(Continued on Page 131)

Bovaird & Seyfang STEAM DRILLING ENGINES



The new Class C-1 Steam Engine illustrated is the latest BOVAIRD & SEYFANG development in Steam Engines, and was first placed on the market in 1924—*Renewable Babbitt Liners,* balanced slide valves, out board bearing, 3" throttle valves—are a few of the many features of this engine that will meet with your approval. All parts except the cylinder, cylinder head, piston and rings are interchangeable. Made in sizes 23, 25, 28 and 30 H. P.

Descriptive bulletins and prices will be sent on request.

Carried in stock at all Bovaird Supply Co. stores.

BOVAIRD & SEYFANG MFG. CO.
Bradford - - - Penna.

136 pounds less-

TOOL STEEL THAT YOU SAVE!

Only 8 lbs. of RAPIDUCTION chasers — as compared to 144 lbs. of dies for the old type of pipe threading machine.

And lower die cost is *only one* of the economies.

The handful of inexpensive chaser bits means lower cost all along the line, because of the "use it and throw it away" principle.

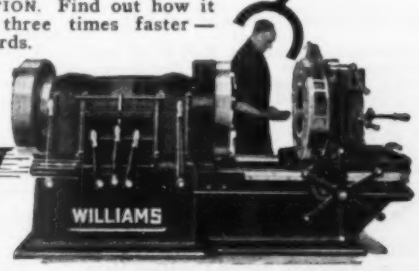
No time wasted in re-cutting. No need for a whole new set. If you snip one die—just insert a new chaser in a few seconds.

Then there's the labor-saving lead-screw—the large cast iron spindle bearings which are self-oiled and always trouble-proof—the reputation of the RAPIDUCTION for bucking (running a pipe into a coupling).

Write us for all of the facts about this more productive pipe machine—the RAPIDUCTION. Find out how it cuts threads three times faster—write for records.

Williams Tool Corporation, Erie, Pa.

WILLIAMS
RAPIDUCTION
POWER PIPE MACHINE



List of Dealers Who Handle Williams Tool Line Exclusively

Manning, Maxwell & Moore, Inc., New York, N. Y.; Pittsburgh, Philadelphia, Boston, Birmingham, Buffalo.
Harron, Rickard & McCone, Co., San Francisco, Cal.; Los Angeles, Cal.
Peden Iron & Steel Co., Houston, Texas.
Oliver H. Van Horn Co., New Orleans, La.
E. A. Kinsey Co., Cincinnati, Ohio.
Jos. T. Ryerson & Son, Chicago, Ill.
Oil Well Supply Co., Pittsburgh, Pa.
Portland Machinery Co., Portland, Ore.
Seattle Hardware Co., Seattle, Wash.
Chas. A. Strelinger Co., Detroit, Mich.
English Bros. Machinery Co., Kansas City, Mo.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

LEASES—PRODUCTION

OIL AND GAS LEASE—160 acres in Payne County, Oklahoma; southeast ¼, Section 5, Township 19, Range 6. Box 143, Elgin, Kans.

OIL OIL OIL

800 acres for lease in west Brown County, Texas, between two deep tests. Geo. Guyer, Bangs, Tex.

FOR LEASE—Sixty-five sections in solid block in King County, Texas. Also checkerboarded acreage in Jones County, Texas. Allen Buell, Jr., Grace Hotel, Abilene, Tex.

FOR SALE—Oil lease, 320 acres, Survey 23, Block 36, Crockett County, Texas. Runs more than four years yet. L. I. Lewis, 115 N. Madison, Enid, Okla.

1,000-ACRE lease, Miami County, Kansas. Shallow; five producing wells positively guaranteed. Box 653, Kansas City, Mo.

FOR SALE — 200-acre lease, with pumping power; two producing wells; also No. 28 Star fully equipped drilling machine. Because of ill health will sell at a sacrifice and at once. Inquire of C. J. Kelley, 602 N. Pine St., Nowata, Okla.

TO LEASE for immediate drilling, 140 acres, 2 miles north of Weleetka, Okla. A choice location with good oil surroundings. Box B-530, The Oil and Gas Journal, Tulsa, Okla.

SEND today for our attractive list of Texas leases, royalties, production and fee lands. American Lease & Royalty Co., 1508-J, Dallas, Tex.

SEE
C. O. Walling
for large blocks
to drill for oil and gas.
I sell ranch land also.
32 North Chadbourne St.,
Phone 341
San Angelo, Texas.

FOR LEASE for oil development only, 315 acres upland farm, near Erie, Neosho County, Kansas; natural gas wells on place once. For lease on favorable terms. Inquire of R. N. Cornwall, Box 235, Spencer, Iowa.

SOUTHWEST TEXAS—WINKLER, LOVING, REEVES, WARD, PECOS, CULBERSON COUNTIES
Drilling blocks. Leases. Royalties.
Ranches in fee.
H. F. Anthony, Pecos, Texas.

I HAVE LEASES, 160-acre tracts up, in Lipscomb and Hemphill Counties where the big play is now on at $2 to $3 per acre. New leases made direct from owner of land to you. Dr. W. R. German, Canadian, Texas.

WRITE for my state of Texas oil map free. Oil leases exclusively. Reference, Mercantile Agencies.
C. W. WEBSTER
W. T. Waggoner Bldg.
Fort Worth, Tex.

AMARILLO PANHANDLE OIL FIELD

Underwriter Brainard Ranch oil and gas leases, 25,000 acres in Hutchinson County. Hutchinson County is the major producing area. New 5-year leases from 20 acres to 160 acres. Bought right, can sell at reasonable price per acre. Write for map and prices. I have handled, as underwriter, over 60,000 acres in the field on which over 80 wells are now drilling or producing. Ed R. Mayer, Amarillo Hotel Bldg., P. O. Box 1186, Amarillo, Tex.

FOR SALE—Leases and production in Warren, Allen and Barren Counties. Have leases in Barren County joining producing leases and some within half-mile to 1 mile of production. W. P. Harley, Bowling Green, Ky.

FOR SEMINOLE County leases and royalties communicate with Brown Brothers & Co., Seminole, Okla. Box 41.

LEASES—PRODUCTION

STRONG gas pressure in well on my 1,000-acre farm. Geologists say oil; will lease good driller. I. E. Beckum, Kilmichael, Miss.

TEN-YEAR oil leases. No rentals. Crockett County, Texas. Send for true map. Paul Kons, Box 291, Fort Worth, Tex.

SOUTHEAST NEW MEXICO
Can furnish practically proven leases in Artesia Field, Eddy County. Also other tracts in Eddy, Chaves and Lea Counties. Particulars on request.
H. T. ORCUTT
1114 Colcord Bldg., Oklahoma City, Okla.

HAVE BUYERS for flush or settled production in Oklahoma and north Texas. Vern R. Hartman, P. O. Box 442, Dallas, Tex.

FOR SALE—Two 40-acre oil leases in Crockett County, Tex. Dr. Farmer, 402 Gibbs, Bldg., San Antonio, Tex.

FOR SALE—Choice leases in Panhandle, Texas, oil field, priced to sell. Address Western Finance Co., 7-208½ Taylor St., Amarillo, Tex.

FOR SALE
900-acre oil and gas lease, Southwest Texas. Price, $450.00. Address
P .O. Box 929, Jacksonville, Fla.

SHALLOW PRODUCTION
Near San Antonio, details to bonafide purchasers only. George E. Ginter, Calcasieu Bldg., San Antonio, Tex.

HAVE SEVERAL pieces of flush and settled production for sale in Oklahoma and Wichita Falls districts. Prices reasonable and terms can be arranged if necessary. P. O. Box 1144, Dallas, Tex.

ROYALTIES—PRODUCTION

ROYALTIES FOR SALE—One-tenth of one-eighth interest 480 acres in New Mexico for $100. Three tests now drilling near this land. Box B-465, The Oil and Gas Journal, Tulsa, Okla.

BUY ROYALTIES on core drilled structures. For same write 304 Orpheum Bldg., Wichita, Kans.

ROYALTY UNITS, Garber Field, paying 100 per cent. Box 653, Kansas City, Mo.

ALL OF royalty and fee, 640 acres, half mile from Roxana drilling well. Write 304 Orpheum Bldg., Wichita, Kans.

WILL BUY producing royalties direct from owner; send complete information first letter. R. H. Manning, Dan Waggoner Bldg., Fort Worth, Tex.

FOR SALE—EQUIPMENT

FOR SALE
10,000 each size.
½" Iron Pipe Couplings.
¾" Iron Pipe Couplings.
1 " Iron Pipe Couplings.
1¼" Iron Pipe Couplings.
1½" Iron Pipe Couplings.
2 " Iron Pipe Couplings.
CAPITOL MFG. & SUPPLY COMPANY
550 Nichols St., Columbus, Ohio.

A JOB LOT BARGAIN IN GAS METERS

30 Metric Iron case No. 5 Lt.-B, tested running but three.
10 Equitable, round iron case, not tested.
1 Tobey No. 3 iron case, not tested.
40 Little giant regulators.
All the above removed from service inside 30 days.
Price for lot as listed $300.00, f.o.b. car, Paola, Kans.
Address
F. W. BLACK
Paola, Kans.

FOR SALE
One No. 30 Star Drilling Machine.
One No. 28 Star Drilling Machine.
Equipped to drill 1,800-foot wells.
Also 900 feet 10-inch casing.
1,300 feet 8-inch casing.
1,700 feet 6⅝-inch casing.
Located at Eureka, Kans.
Joe P. Cooper, 319 N. Grant St.,
Chanute, Kans., Phone 1310.

FOR SALE—Pacific Oil Tool Hydraulic Pumping unit. Priced to sell. Bush-Voorhis Oil Co., Long Beach, Calif.

FOR SALE—EQUIPMENT

2—150-H.p. Reeves vertical gas engine direct connected to Reeves 17x11½x13 vertical gas compressor.
2—80-H.p. Bessemer gas engines.
2—150-H.P. Bessemer gas engines.
2—165-H.p. Bessemer gas engines.
2—14x7x14 Ingersoll-Rand Type 10 compressors.
2—16x8x16 Ingersoll-Rand Type 10 compressors.
2—20x12 Ingersoll-Rand Type 10 compressors.
THE ACME EQUIPMENT COMPANY
207 Fulton Bldg., Pittsburgh, Pa.

CASING and drilling machines for sale.
300 ft. 16" 65-lb. casing.
1,100 ft. 12½" 50-lb. casing.
2,000 ft. 6⅝" 17-lb. casing.
2,300 ft. 5⅜" 17-lb. casing.
All in good shape, used in one well.
2—No. 27 Star drilling machines.
1—4" Parkersburg drilling machine.
With mounted boilers and tools.
Cash f.o.b. cars.
MID-EGYPT GAS & OIL COMPANY
Ava, Illinois.

FOR SALE—Eight-inch Bignall & Keeler motor-driven pipe threading machine, complete. Can be seen in operation. We need the room to install larger machine.
CENTRAL PIPE & SUPPLY CO.
2036 Central St., Kansas City, Mo.

FOR SALE—First class machine shop, motor driven tools; located in brick building; will lease building. Box B-503, The Oil and Gas Journal, Tulsa, Okla.

CASING FOR SALE
12,000 ft. 4½-in. seamless, 16-lb. casing.
10,000 ft. 6¼-in. 26-lb. casing.
6,000 ft. 8¼-in. 36-lb. casing.
This pipe practically as good as new. Pipe located Three Sands, Okla. 613 Kennedy Bldg., Tulsa, Okla. Phone 2-3052. L. D. 201.

EMVEE
SIGHT FLOW SEPARATOR

Permits of carrying back pressure on pumping wells, now conceded to be very desirable.

Saves every foot of gas for use on the lease.

Automatically separates oil, gas and water.

Absolutely holds the gravity of the crude.

Reduces amount of B. S. to the minimum.

Eliminates evaporation.

You can see the wells pump.

Positively fool proof.

Sizes 16 bbl., 25, 50, 100 and 130 Bbl.

Send for descriptive matter.

M. & V. TANK COMPANY
Wichita Falls, Texas

FOR SALE—Secondhand pipe with first-class threads and couplings: 30,000 feet 2-inch, 8 cents per foot; 20,000 feet 2½-inch, 10 cents per foot; 15,000 feet 4-inch, 28 cents per foot. Texas Supply Co., Postoffice Box 1777, Houston, Tex.

A JOB LOT BARGAIN

In 6-inch, 8-thread Line Pipe Fittings.
8—6-inch Gate Valves flanged-brass stems 125 to 250 pounds pressure.
4—6-inch Gate Valves screw ends brass stem 125 to 250 pounds pressure.
1—6-inch brass lined expansion joint, flanged, new, never used.
1—6-inch brass lined expansion joint, screw ends, new, never used.
5—6-inch 8-bolt cast iron flanged unions.
13—6-inch cast iron tees and 8 ells.
27—6-inch nipples, 6 inches to 5 feet long, 8-thread, 17-pound casing.
1—6-inch Dresser Sleeve, 6 inches long, 6 bolts.
1—6-inch Dresser Sleeve, 18 inches long, 6 bolts.
7—6-inch plugs.
2—6-inch open saddles, 4-inch and 1¼ inch openings.
All of the above in perfect condition, used very little and good as new.
Price for the entire lot, $275.00.
F. o. b. car, Paola, Kans.
Address
F. W. BLACK
Paola, Kans.

FOR SALE—EQUIPMENT

FIVE 12-H.P. Backus horizontal gas engines with friction clutch pulleys; excellent condition, were used to pull fans in schools this city and replaced by motors, $175 each or $750 for the lot. Box B-524, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—One No. 27 Star drilling machine, one 30 H. P. mounted boiler. Everything complete for drilling 12½-inch to 5⅞-inch holes. Steel used in two 1,400-foot holes, manila cordage in one hole. Wire lines have only drilled 300 feet. Machine located at Albany, Tex. Address Room 556, Harvey-Snider Bldg., Wichita Falls, Tex.

USED LINE PIPE FOR SALE
50,000 feet 3-inch
75,000 feet 4-inch
50,000 feet 6-inch
Two miles 60-pound first-quality relaying rails.
For immediate shipment from our Texas yards.
KEYSTONE PIPE & SUPPLY CO.
315 W. T. Waggoner Bldg.
Fort Worth, Texas.

FOR SALE—28 Star drilling machine, complete. James Gibbs, Humboldt, Kans.

A GAS BOOSTER OR AIR COMPRESSOR OUTFIT

1—35-H.p. Webber gas engine, complete, Wyco Mag-Belt, etc.
1 Single cylinder 12x18 inch Bessemer compressor.
The above outfit removed from service less than 90 days under cover and should be in perfect working condition.
Price for the outfit $600.00.
F.o.b. car, Independence, Mo.
Address
F. W. BLACK
Paola, Kans.

FOR SALE

Eight steel storage tanks 8 feet diameter by 40 feet long; located at Little Rock, Ark. Price $575 each f.o.b. cars.

Two No. 12 Sweetland filter presses. Phone, write or wire.
CONSOLIDATED PRODUCTS COMPANY, Inc.
15 Park Row New York City

FOR SALE
7 Westinghouse motors, 440 volts, 3 phase 35-15-H.p. Standard oil well pumping equipment. Price $4,900.00.
G. E. GILBERTSON
Box 75 El Dorado, Ark.

MANUFACTURING MACHINISTS

CRAGO CUT GEARS
Worthy of your confidence. General machine work. 1416 Walnut, Kansas City, Mo. Phone Harrison 7660.

INCORPORATIONS

DELAWARE incorporators. Charters fees small, forms. Charles G. Guyer, 901 Orange St., Wilmington, Del.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

POSITION WANTED

POSITION WANTED—Graduate electrical mechanical engineer; 11 years experience oil field work. Electrification of pumping wells, design and construction substations for refineries and oil terminals on Pacific Coast. Past year employed as property engineer for large Mid-Continent company. Married. Best of references. Box B-534, The Oil and Gas Journal, Tulsa, Okla.

YOUNG MAN, married, 15 years' experience as traffic manager one of major independents, desires connection same capacity some growing oil company in Southwest. Thoroughly competent take charge established traffic department or start new one. Best reasons for leaving present position. Box B-536, The Oil and Gas Journal, Tulsa, Okla.

THOROUGHLY experienced drilling and production man capable of taking charge of drilling, production and operation, open for position. Over 15 years' experience handling cable and rotary production and drilling. Married, references. Box B-520, The Oil and Gas Journal, Tulsa, Okla.

EXPERIENCED DESIGNER AVAILABLE

Mechanical engineer, thoroughly experienced designer is available. His experience covers stationery Diesel engines, gas engine, compressors, drilling engines, gas or Diesel type, etc., etc. He has worked for three well-known American manufacturers during the past 15 years. He is 43 years old, well balanced and well read. He wants to associate himself with a manufacturer who requires an experienced and efficient designer. Box B-531, The Oil and Gas Journal, Tulsa, Okla.

PETROLEUM ENGINEER and geologist, university graduate, with 10 years' experience in Mid-Continent Field; experienced in gas and air recovery methods; desires connection with individual or company. Will do geological work on salary and interest basis. Box B-532, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Position by refiner; capable of getting highest possible per cent of gasoline obtainable from any kind or grade of crude. Specialist on cracking and an experienced heavy oil man. Foreign service preferred; references. Box B-533, The Oil and Gas Journal, Tulsa, Okla.

EXPERIENCED Texas lawyer desires North Texas connection with oil company. Box B-528, The Oil and Gas Journal, Tulsa, Okla.

OIL ACCOUNTANT with eight years experience both field and office, wants connection with progressive company or individual. A young man, 29 years of age ,single, thoroughly competent to handle any work assigned; available immediately; nominal salary until worth proven. Box B-522, The Oil and Gas Journal, Tulsa, Okla.

REFINERY superintendent, at present employed, wishes to make change; college graduate; familiar with high and low-pressure vacuum and complete refinery operations with all type crudes. Box B-510, The Oil and Gas Journal, Tulsa, Okla.

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Refined Prices Holding In Chicago

Demand for Gasoline Expected to Increase With Better Motoring Weather. Fuel Oil Market Dragging

By John B. Waldo

CHICAGO, Oct. 9.—The weather during the past week, while not ideal for the season until the very close, was better than the two weeks preceding. There were several days with no rainfall and the industry begins to have hope that we are about to have some of the fall weather for which the West has a reputation.

The consumption of gasoline was good the first half of September and comparisons made of the first 15 days of the month by the larger oil companies showed a good increase over 1925, and September last year was a good month. But the last half of last month spoiled the record and the total consumption of gasoline over the territory is generally stated to show but a small percentage of gain over last year. Some have done better than others, but the record in the fact of such conditions cannot be very favorable, especially as the comparison is made with what was a very good month in 1925.

Stocks Are Less

With this falling off in actual consumption for the last half of September and the first week of October, the demand for tank cars on the refineries has been reduced, but still there has been some business right along. Jobbers usually at this season of the year reduce the quantity of gasoline they carry in storage so that stocks in the country are believed to be very much less than two months ago — probably considerably less than one month ago. The orders received have shown the actual necessities of the jobber. So far as the Middle West is concerned, stocks between the refiner and the final consumer are reduced, and with good weather to increase the consumption and some doubts as to the maintenance of crude and tankwagon prices removed, it would be natural at this time for jobbers to build up their stocks a little. This probability and the reports of low stocks in the refiners' storage have helped to maintain a very fair market for gasoline. From what is reported by several refiners in regard to the curtailment of their own individual runs, it is evident that the output of gasoline is being reduced, to some extent at least, so that the market is being rather well sustained with practically no offers of motor gasoline at distress prices.

The demand has been larger this week, although for the most part scattered orders of from one to five cars make the majority of the business done. At this writing the Benzolene Motor Fuel Co., which supplies the taxicabs and the motor buses, has an inquiry out for 25 to 50 cars of motor grade. The Greenslade Co. of Detroit bought early in the month for its requirements, but these two instances are hardly a sign of the average business being done by jobbers, as both concerns cater to a city trade only. There has been little or no inquiry for anything under the motor grade and the sales of the higher tests have not been sufficient to really make a market here, although it was reported that Sinclair had bought a million gallons of 64-66 in the field during the week.

Gasoline at 10 Cents

It is doubtful if any real U. S. Motor gasoline has sold at less than 10 cents to the jobber. Several refiners started the week with a quotation of 10½ cents, but they found that refiners elsewhere were either quoting the trade direct at 10¼ cents or were selling for resale at prices that permitted the marketer to quote that price so they met the quotation, which was really the ruling quotation at the beginning of the week. During the week there has been some short selling and some quoting of prices by refiners for resale at a little less than 10 cents. Quite a number of refiners are still asking 10¼ cents and some will not enter orders for less. Others who ask 10¼ cents says that they will meet any responsible competition, and one or two frankly say that their price is 10 cents and that they will not go lower. Offers have been received of gasoline for resale at 9⅝ cents, Group 3, out of Wichita Falls and Shreveport, but some of this gasoline is not sweet and has caused its sellers a lot of trouble, so it is not so easily moved in this market. Some have stated that they could buy from Group 3 refiners at 9⅞ cents, but if the market is yielding it is doing so very slowly and rather as the result of mere dullness and not from any real pressure to sell.

Refiners state their marginal contracts are being taken out as well as could be expected under the circumstances, in fact are moving rather slowly. The inquiry continues for opportunities to secure the selling agency of some of the antiknock gasolines. Many jobbers are quite enthusiastic regarding the actual business possibilities of these new kinds of gasoline. Many makes are being put out to the larger dealers as exclusive agents, with sales helps in the way of local advertising and printed matter to distribute as well as the customary signs and globes.

Kerosene Moving Slowly

Sales of kerosene have been disappointing, both by the refiner and the jobber. The latter has not had nearly the amount of business that he expected this fall, the tractor season being cut short by the wet ground. The market is holding steady at 7¼ to 7½ cents, the latter price being that of refiners with distribution to help out their sales. It is pointed ou that the distillate price is so near that of kerosene that refiners will be able to sell the untreated distillate at a price which will pay them as well as to treat it and sell it at 7 to 7⅛ cents, which is the present quotation for resale. The market is steady.

The distillate demand is irregular, due largely to the changes in the weather. The demand from consumers has fallen off, and as many have supplies for a number of weeks in their tanks at the present rate of consumption, the tendency on the part of distributors is to hold back and see if they cannot secure lower prices. Many have some supplies on which they can draw. Still there is a steady inquiry and more business would result if prices were reduced a little. The offerings are larger, but refiners are in most cases holding at around 6 cents, with others selling at 5¾ cents. Several refiners early in the season stated that they had no distillate to offer and the probability was that they would not have any. In one case the statement was made as a positive fact. The curtailment of the gasoline demand or some other reason has permitted these refiners to accumulate a considerable quantity of distillate which they are offering to their regular customers.

Customers Expect Service

It is bad policy for a refiner to force his customers to turn to other sources of supply for any part of their needs which he can furnish. It is very likely this fact that induces the Standard Oil Co. to run a quantity of distillate. Regular customers expect that service and in the long run it pays to give it to them. In the long run the matter of price will be adjusted so that there will be a profit in the production and sale of any wanted commodity. Manufacturers of oil burners state that they are now very busy making installations and some claim that they have orders from their sales agents that will provide business for the plant for the remainder of the year.

The gas oil position does not seem quite as strong as it did. There have been several occasions when large industrial buyers have been able to secure cracked gas oil of good quality at 4 cents in quantities, one order having been placed for 25 cars at this price. This sale is reported to have been made by a refiner direct. Car lot marketers are generally holding for 4⅛ to 4¼ cents and the uncracked oil is held at one-eighth higher, with light color oil commanding a premium. The offerings are ample, and observers who have been in the group say that there is a great abundance of gas oil being held for a market. There does not seem to be any general move towards reduced prices, but a refiner here and there will for some reason become anxious to move his accumulation or some part of it and the usual result is a lower price for the quantity which he desires to sell. The demand is generally dragging, with few large transactions closed or in sight. Distributors in the surrounding territory where they have storage have accumulated some stocks and others have contracts, but the smaller dealers are placing orders for a car or two from time to time and much of the present business comes from this source. The present consumption is curtailed by the really fine fall weather that has come to this territory during the last two days of the week.

Fuel Oil Dragging

The dealers in fuel oil still report a dragging market. The bulk of the business is for small quantities. The large users simply will not, according to the trade, make contracts or buy any large amount. Of course there are occasional exceptions. The Bettendorf Axle Co., which some time back took a hundred cars of 18-22 fuel oil, is now receiving a second order of similar size, and there are others who will order ahead of their needs, but generally the large industrial users are buying simply what they must have and holding back for better prices. The buyers of these large industries keep posted to an extent on the market, some better than others, but all have great faith that there will be a lower crude price and with it lower prices for fuel oil. At any rate as they see it, there will be no advances in prices with such large accumulations of fuel oil as are reported.

Prices are a little lower and occasionally a refiner that wants to reduce his holdings will make an attractive price something below the present market and he can usually find a buyer with ease as the industrial situation is good in spite of some reduction of the immediate purchasing power of the farming class throughout the flooded districts of the West. The higher gravities, including the 24-26 and up, are holding better than the heavier gravities of which there are some very free offerings. A couple of weeks ago the bottom price for any heavy fuel oil was $1.30, but right now it is $1.25 for the 16-18 gravity, and even 18-22 can be had at that price. In fact a sale was made of 50 cars at $1.20 in buyers' cars which would make it $1.22½ in sellers' cars. The lower prices for refinery fuel oil have brought out some lower quotations for Smackover fuel, and while the bulk of the business is going at $1.30, sales have been made at as low at $1.25, but the market for this oil is still holding better than the refinery product. There is considerable variation in the oil as supplied to consumers here, some of it being thoroughly treated while other lots are only partly treated, and some is so mixed with water and sediment that it does not seem to have had anything done to it. The mild weather has reduced the consumption of fuel oil where it is used solely for heating as in a great many large buildings, including hotels, public buildings and the like.

Lubricating oils are running along with little change. The Mid-Continent Petroleum Corp. is reported to have authorized a material increase in its equipment to enlarge the lubricating output and generally the western refiners of lubricating oils are in a very good position, although the immediate business is only fair. The dealer demand for motor oils is light right now. The industrial demand is running along with little change and must bulk a large total, although the business is divided among a great many sources of supply. No changes in prices are reported.

The tankwagon situation is still unchanged, and there has been no general change over the territory. There is much talk of impending changes which come for the most part from the decline in the refinery market for both gasoline and kerosene. A reduction in the tankwagon price on kerosene was expected following the decline in the eastern tankwagon price list. The point is made that present prices to consumers are not burdensome for either gasoline or kerosene as compared with the average over a period of years. The prices have been less and they have been more. There seems to be no reason from this stand to make reductions, and a cut in prices would not and could not increase the consumption by a single gallon. Stocks of refined products are not excessive, and a little better weather will bring about some improvement in the demand.

PENNSYLVANIA MARKET GASOLINE IS SOFTER

OIL CITY, Pa., Oct. 9.—Gasoline is now slightly softer in the Pennsylvania refined oil market. The price has declined some, although there has not been any big drop recorded in this section. The weather has had considerably to do with the sliding off in the demand for gasoline, having been sold and wet and unsuitable for motoring throughout the week. The same condition has held true for kerosene and the weather has prevented the farmers from doing any plowing with a lessening of the demand for water white.

Neutrals continue to be in fine shape both as to price and demand. Bright stock and all the various grades of filtered goods are holding up well and are in good demand. Cylinder stocks are in bad condition. Wax is in about the same status as it was at the close of last week, although the demand has fallen off a little. Fuel oil is holding up well.

MOVED TO CHICAGO

In order to be more centrally located, the Union Tank Car Co., with offices at 21 East Fortieth St., New York City, moved its entire executive and general office force on September 16 to Chicago, where they have taken space on three floors of the Metropolitan Building, 134 North LaSalle Street.

Although this move involves the transfer of 75 families from New York to Chicago, the moving arrangements of the officials and clerks have been so planned that there will be practically no break in the daily operations of the company's affairs. The company will retain a New York office at 21 East Fortieth Street.

TEMPORARY GASOLINE REDUCTION BEING TALKED OF ON EAST COAST

By N. O. Fanning
New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York City

NEW YORK, Oct. 9.—The belief is gaining throughout the Atlantic Seaboard oil markets that a general reduction in the tankwagon price of gasoline is imminent, and some predict ultimate cuts aggregating 3 cents a gallon, below present prices. The quotation now is 21 cents throughout New York and New England and 19 cents in most of the States of the Atlantic south of New York.

Local reductions are more numerous along the Seaboard, some reaching more than 4 cents a gallon below the nominal tankwagon price.

The cause of the growing weakness of the situation is said to be unfavorable weather on the one hand, and a slight backing up of oil into storage on the other. Both factors may be temporary.

There were no general gasoline price reductions in the east during the past week. The Standard Oil Co. of New Jersey reduced the tankwagon price of kerosene 1 cent a gallon throughout its territory, to 16 cents, effective October 5. The Standard Oil Co. of New York continues to maintain a price of 18 cents throughout its territory.

Other changes in prices during the week included reductions in export gasoline and kerosene of one-half cent, bringing gasoline in cases to 27.90, standard white kerosene to 19.15 and water white to 20.65 cents per gallon.

Furnace Oil

This will mark the second winter in which oil companies have carried on intensive campaigns to increase sales of furnace oil. The average tankwagon price of this product on the Atlantic Seaboard is 11½ cents a gallon, for large lots, and 12 cents for small quantities. It will mean much to the oil companies to develop sales of this product in the event of seasonally lower quotations for gasoline and lubricating oil.

The movement toward installation of oil burners in office buildings, apartments and private homes continues unabated. As a result, a record demand for furnace oil is anticipated this winter.

To some marketers furnace oil appears a small item in the total of petroleum sales, but to others it represents a potential market second only to that of gasoline, within a few years.

Diesel Oil

The price of Diesel oil at New York remains firm at $2.50 a barrel, with the demand continuing to increase. Any reduction in prices of this product would be in sympathy with bunker oil or crude, and would be expected to still further stimulate consumption.

Word from London states that the directors of the White Star Line have ordered construction of a new vessel, the Oceanic, which will be 62,000 gross tons, and be one of the largest transatlantic liners afloat. It will be equipped with four immense eight-cylinder Diesel engines developing 60,000 horsepower.

It is expected the new motor system of propulsion will reduce the working expenses of the liner by $50,000 per round trip, as compared with the Majestic, which is a fuel oil burner. The Oceanic will be the largest ship afloat with Diesel propulsion.

Bunker Fuel Oil

The bunker fuel oil market is somewhat weak; $1.65 is the nominal quotation, but some companies are said to be doing business at a little under that figure. An increase in receipts of heavy Mexican oil is said to be partly responsible for lower prices.

Gas Oil

There is a better demand for gas oil. The price continues firm at 6¾ cents a gallon, f.o.b. refinery, in tankcar lots.

Lubricants Soft

Although lubricating oils have held up fairly well, demand is a little slack, and some marketers anticipate a reduction in prices around November 1, unless conditions change before then. It is said that there has been some "dumping" of red and pale oils. Cylinder oils, spindle oils and neutrals exhibit the firmest tendency at present.

Spindle oil is perhaps firmest of the lubricants at present, due to improvement in textile operations. Lower cotton prices, in a sense, have benefited the manufacturer, who has had to be content for some time with a small margin of profit due to the high cost of the raw material.

Paraffin Wax

The paraffin wax market is weak. Wax of 120-122 a.m.p. has been available at 5¾ cents a pound (for refined), which is the lowest price of the year. Other melting points are holding better.

Petrolatum

The market for petrolatum is unchanged. Dark green is moving more briskly at 2 cents a pound, which is considered a good sign as related to other grades.

Exports

The growing importance of the South American oil market was further illustrated by a bulk shipment from New York to Brazil during the week aggregating 2,981,581 gallons, consisting of 1,128,592 gallons of fuel oil and 1,852,989 gallons of gas oil, which was said to have been shipped by the Anglo-Mexican Oil Co. About a month ago there was a bulk shipment to Brazil of 886,413 gallons of lubricating oil. South America has heretofore been largely a cased oil market, so far as New York was concerned. Several of the South American countries have made rapid strides since the war in the use of petroleum products.

The demand for export oil at New York continues good. Europe is actively buying both gasoline and kerosene.

Petroleum asphalt continues a strong feature in the export trade. More than 2,000,000 pounds moved during the past week.

The following table shows principal exports of petroleum and petroleum products from New York during the last three weeks (figures in gallons unless otherwise noted):

	Week Ended		
Gasoline:	Oct. 6	Sept. 29	Sept. 22
Bulk	1,798,229	6,200,108	827,662
Barrels	166,450	85,300	118,950
Cases	1,354,280	1,862,150	1,676,560
Kerosene:			
Bulk	2,132,049	6,297,539	1,073,393
Cases	872,680	3,849,230	3,222,050
Gas oil:			
Bulk	1,852,989	452,025	.....
Fuel oil:			
Bulk	1,128,592	.....	.....
Lubricating oil:			
Bulk	211,282	.....	896,495
Barrels	1,562,050	684,300	1,770,600
Cases	324,120	256,820	332,640
Lubricating grease:			
Barrels (lbs.)	679,950	589,050	1,229,400
Paraffin wax:			
Bags (lbs.)	1,559,360	848,100	2,570,260
Barrels (lbs.)	972,800	669,750	2,099,025
Petroleum asphalt:			
Bulk	303,970	.....	.....
Barrels (lbs.)	1,738,500	237,500	.....
Petroleum coke:			
Bags (lbs.)	.....	1,232,000	.....

The foregoing figures include shipments of 500 bbls., 1,000 cases, or more.

Tanker Market

The oil tanker charter market has exhibited a noticeable slowing down during the past week. Fixtures have been few and far between. This is partly seasonal. The period of greatest activity is usually from March to September.

The Cities Service Co. is said to have purchased the tanker Agwisea, which has a capacity of about 99,000 bbls., from the Atlantic, Gulf & West Indies Co. The vessel has been renamed the Cities Service Petrol and is in operation in the California-Atlantic Coast trade.

Other recent tanker deals include purchase of the Eurana by the Gulf Refining Co. The name has been changed to Gulfbreeze.

Recent tanker fixtures include the following:

Motorship Holden Evans (Am.), 2,025 tons net, crude oil, Gulf to Barcelona, 33s 6d., October loading.

Tanker Torres (Am.), 2,955 tons net, Tampico to New York, 39 cents a barrel, fuel oil, October loading.

Tanker Pawnee (Br.), 3,002 tons net, Gulf to two ports French Atlantic, 28s. 6d., October loading.

Oil Receipts

Receipts of crude and refined oil by water at Atlantic Coast ports averaged 489,000 bbls. during the past week, compared with 538,000 bbls. the preceding week. Receipts from the Gulf Coast increased, averaging for the week (ended October 6) 315,000 bbls., as against 308,000 bbls. the week before.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports for the last three weeks; also monthly record for the last 12 months (figures in barrels):

	Week Ended		
Source—	Oct. 6	Sept. 29	Sept. 22
Gulf Coast	315,000	308,000	231,000
Pacific Coast	82,000	70,000	114,000
Mexico	68,000	108,000	48,000
South America*	24,000	52,000	76,000
Total	489,000	538,000	469,000

	Daily Averages by Months				
1926:	Gulf	Pacific	Mexico	So. Am.	Total
Sept.	299,000	98,000	63,000	58,000	518,000
Aug.	320,000	61,000	71,000	46,000	498,000
July	360,000	66,000	115,000	36,000	577,000
June	396,000	104,000	117,000	18,000	635,000
May	318,000	66,000	114,000	25,000	523,000
April	326,000	92,000	126,000	20,000	564,000
March	317,000	97,000	152,000	26,000	592,000
Feb.	332,000	73,000	104,000	18,000	527,000
Jan.	279,000	59,000	65,000	31,000	434,000
1925:					
Dec.	298,000	56,000	90,000	13,000	457,000
Nov.	259,000	36,000	80,000	12,000	387,000
Oct.	249,000	36,000	80,000	22,000	387,000

*Including Trinidad.

The foregoing estimates are based on carrying capacity of incoming oil-laden tankers.

TEXAS PANHANDLE AND NORTH TEXAS LOCATIONS

(Continued from Page 126)

feet east W. P. Zuber Survey, A-887, being 150 feet north and east SW cor. J. J. Perkins 30-acre lease.

Palo Pinto County

Britton & Gordon's No. 1 Anna F. Johnson, 1,200 feet north and 1,000 feet east SW cor. John Byrd Survey, A-27. Chestnut & Smith's No. 1 L. E. Seaman, 330 feet south and west NE cor. George Archey Survey, No. 98.

Shackelford County

Lee and others' No. 1 W. McLemore, 3,300 feet south and east NW cor. B. B. Stonecell Survey. Roeser & Pendleton's No. 10 W. I. Cook-B, 507 feet south and 150 feet east NW cor. SW Section 60, Block 10, E. T. Railway Survey; No. 11, 506 feet south and 500 feet east NW cor. SW NW, Section 60, Block 10, same survey; No. 12, 506 feet south and 433 feet east NW cor same survey; No. 13, 506 feet north and 433 feet east SW cor. NW NW, same survey; No. 5 W. I. Cook-B, Section 61, 150 feet north and 814 feet east SW cor. Section 61, Block 10, same survey; No. 35 W. I. Cook-A, Section 84, 760 feet north and 450 feet west SE cor. NW SW, Section 84, Block 10, same survey. Tidal Oil Co.'s No. 1 C. Flippen, 750 feet north and 850 feet east SW cor. Section 69, Block 11, T. & P. Railway Survey.

Stephens County

Humble Oil & Refining Co.'s No. 1 W. G. Cockrell, 250 feet north and west SE cor. west half Section 7, Block 6, T. & P. Railway Survey. Morton and others' No. 1 C. A. Fambrough, 660 feet north and 250 feet west SE cor. C. A. Fambrough 101-acre tract Section 34, Block 6, T. & P. Railway Survey. Sun Oil Co.'s No. 4 O. R. Rochelle-A, 310 feet south and 150 feet east NW cor. NE Section 52, Block 5, T. & P. Railway Survey.

Throckmorton County

Humble Oil & Refining Co.'s No. 1 D. McKeichen, 150 feet south and east NW cor. south 48 acres, west 120 acres, D. McKeichen Survey, A-1,227. McCurdy and others' No. 1 Mrs. M. E. Ledbetter, 150 feet NE SW line and 150 feet NW SE line, NW 50 acres Mrs. M. E. Ledbetter 210-acre tract out of A. J. Kemper, A-1,369.

Wichita County

M. M. Garrett's No. 1 Kemp & Kell, 150 feet north and west SE cor. NE NE S. P. Railway Survey No. 6, A-796. Humble Oil & Refining Co.'s No. 1 Kemp Kemper-F, 150 feet north and west SE cor. Block 54, Kemp's Wichita Valley Lands. The Texas Company's No. 315 W. T. Waggoner, 2,736 feet south and 551 feet east SE cor. Section 19, G. C. & S. F. Railway Survey, A-359, and located in Section 20, G. C. & S. F. Railway Survey, A-606; No. 316, 2,739 feet south and 769 feet west SE cor. Section 19, G. C. & S. F. Railway Survey, A-359 and located in same section; No. 317, 2,705 feet south and 1,309 feet west SE cor. Section 19, G. C. & S. F. Railway Survey, A-359, and located in same section. Texhoma Oil & Refining Co.'s No. 1 A. W. Burnside, 150 feet south and east NW cor. north 40 acres, east 80 acres, west 20 acres, A. W. Burnside 200-acre tract out of J. W. Sharp Survey, A-262; No. 1 J. J. Weibener, 150 feet north and east SW cor. east 100 acres, north 160 acres, J. J. Weibener 200-acre tract B. B. B. & C. Survey, A-28; No. 2, 150 feet north and 450 feet east of 100-acre lease, B. B. B. & C. Survey, A-28.

Young County

Panhandle Refining Co.'s No. 1 Mrs. O. W. Mathews, 150 feet south and east SW cor. A. McMullen Survey, A-198, and located in Rohus Survey, A-240. Roberts Oil Co. and Carter & Ruff's No. 8 Graham Stewart, 1,590 feet south and 2,160 feet west NE cor. David Dawson Survey, A-76. Roxana Petroleum Corp.'s No. 1 J. T. Hunt, 150 feet south and west NE cor. south 40 acres, east 138 acres, Section 175, T. E. & L. Survey. The Texas Company's No. 2 Mrs. N. Prideaux, 450 feet north and 150 feet west SE cor. south 50 acres, I. & G. N. Railway Survey, A-1,324; No. 18 A. Beardon, 2,417 feet north and 1,539 feet west SE cor. I. A. Payne Survey, A-1,514, and located in Hopkins Survey, A-2,086.

LOUISIANA-ARKANSAS

(Continued from Page 50)

pany's No. 4 Saxon, Section 4-16-16, at 2,252 feet. Unity Petroleum Co. has four wells in Lisbon waiting for standard rigs and locations have been staked for No. 5 Snydor, SW cor. NW SE, Section 21-17-16, and No. 6. NW cor. SW SE, same section.

Ouachita County

Phillips Petroleum Co.'s No. 16 Joyce, Section 33-15-15, an old gas well deepened, was completed at 2,640-41 feet, making 30,000,000 feet of dry gas. Roxana Petroleum Corp.'s No. 7 Berg, Section 28-15-15, was the only oil well completed in Ouachita County last week. It was good for 90 bbls., 3 per cent water, on the pump from sand at 2,636-45 feet.

Gulf Refining Co.'s No. 12 Goodwin, Section 32-15-15, is being bailed to test at 2,372-80 feet. W. R. Keever's No. 2 Neeley, Section 27-15-16, is being bailed to test at 2,269-71 feet. Lion Oil & Refining Co.'s No. 5 Hays, Section 4-16-15, was dry at 2,340-44 feet and was deepened to 2,346 feet and is being bailed. Magnolia company's No. 2 Hughes, Section 28-15-16, is drilling at 250 feet. Standard Oil Co.'s No. 12-B Murphy, Section 28-15-15, is drilling at 1,330 feet. Sun Oil Co.'s No. 7 Hardin, Section 27-15-16, is drilling at 978 feet. Ohio Oil Co.'s No. 4 Betty Hall, Section 31-15-19, is drilling at 1,648 feet.

Columbia County

Gulf Refining Co.'s No. 1 Huggins, Section 31-27-22, started drilling 9-30 and 10-inch casing was set at 276 feet. A derrick is up for Magnolia Petroleum Co.'s No. 1 Sawyer, 330 feet south and west NE cor. SE NE, Section 1-16-20.

Nevada County

Six-inch casing was cemented at 1,257 feet at Autrey Oil Co.'s No. 1 McKinney, Section 9-14-21. Fruen and associates' No. 1 Fuller, SE cor. NE SE, Section 6-13-21, is drilling at 300 feet. Humble Oil & Refining Co.'s No. 4 Bodcau, Section 9-15-22, is drilling lime at 3,017 feet. Humble company's No. 1 Womack, Section 16-14-21, is drilling rock at 1,158 feet. Wright Oil Co.'s No. 2 Groves, 150 feet south and west NE cor. W half NW NW, Section 12-14-21, is drilling at 100 feet.

Recorders in Natural Gasoline Plant

Vital to the All-Important Objective—Net Profits, Charting the Course for the Plant Superintendent

By M. O. Jensen*

The subject "Recording Instruments" really covers a large field, so this article will be confined as much as possible to recorders applicable to and popular with natural gasoline plants.

Recorders can be distinguished by chart form; namely, circular and strip type charts. The circular type meets all the requirements of the natural gasoline plant. It is by far the most simple. Everything else being equal, a clock movement of sturdy design carrying a chart holder will perform month in and out revolving a paper chart against only pen friction. There is really no work to be done.

On the other hand, strip type charts involve well designed and machined chart rolls, rerolls and aligning mechanisms, and a powerful well-made clock, as there is mechanical work to be done. The difficulty experienced in running up a window shade indicates the necessity of a refined mechanism for strip charts.

The strip type chart finds its popular use with electrical temperature instruments as used with pyrometer, potentiometer and resistance thermometer systems. These systems in themselves are elaborate and justify the complex strip chart mechanism which, incidentally, is best suited to the work at hand. While these systems have many distinctive advantages over other temperature systems, their relative high price excludes them from the natural gasoline plant. For refinery application they are entitled to a great deal of respect and consideration.

Mechanical Records

The circular chart is almost universally used with what might be termed mechanical recorders as against electrical recorders. By mechanical recorders is meant those designed and fabricated in obedience to the laws of mechanics and physical science, utilizing mechanical motion to measure directly a physical change of matter. They include differential flow recorders, liquid level recorders, mechanical time recorders, CO_2 recorders, humidity recorders, draft recorders, low and high pressure recorders, vacuum recorders and temperature recorders.

To locate trouble in an electrical recorder, the best of us would need a wiring diagram and an hour or so to study it. Not so with the mechanical recorder. Every plant man is mechanically inclined. So when working on such a recorder he quickly analyzes the assembly and understands the function of each part and its relation to the whole. These recorders have a simplicity consistent with that of the circular chart holder and clock. All of the above mentioned recorders which respond to pressure, vacuum, or confined pressure involve a patented helical tube or diaphragm movement. These movements must be respected in operation and when personal contact becomes necessary. They are sturdy in themselves and in relation to component parts and normal functions, but will not withstand extreme overloads, excessive internal temperatures or the slip of a screwdriver in the repairman's hand.

By confined pressure is meant the force exerted on a helical tube or diaphragm movement by the expansion through a length of capillary tubing from a thermobulb, of a definite, hermetically-sealed volume of mercury, gas or a vapor in the presence of its liquid. It is possible to use as much as 500 feet of capillary tubing without appreciably affecting accuracy, because 500 times the minute cross-sectional area of the tubing bore make a volume vastly smaller than that of the bulb volume.

*Paper read at the September meeting of the California Natural Gasoline Association. Mr. Jensen is manager of the Jensen Instrument Co., Los Angeles.

This does not hold good with mercury filled recorders as the capillary bore is larger and the mercury has a greater coefficient of expansion. Such recorders are safe only up to 25 feet of tubing. Also vapor filled recorders should not be used with much over 300 feet of tubing for similar reasons.

Then, too, regardless of type, factors such as the mechanical limitations of apparatus, working temperature or chart range, location of recorder, temperature medium, radiation, etc., all determine bulb size which in itself often places limitations on tubing length. The location of case, that is, surrounding temperature conditions, must be considered particularly on atmospheric ranges. It is for reasons such as these that instrument men must have a conscience, and forego orders rather than substitute local stock to meet apparent urgent requirements.

Helical Tube and Diaphragm

Since the helical tube and diaphragm movements find so extensive application, a word about their accuracy may be of interest. These movements as used in recording pressure gauges are accurate within 3/10 to 5/10 of 1 per cent of the total chart range. As applied to recording thermometers, the accuracy is within 5/10 to 75/100 of 1 per cent of the linear length of scale on vapor tension types and 75/100 to 1 per cent of total chart range on gas filled types.

An additional word or two about good pressure gauge accuracy might be in order. Gauges with cut dials are accurate within 1 per cent of total scale at any point. Those with etched dials may be 2 per cent of total scale out at ends of scale but not over 1 per cent out through 40 per cent of scale at center. Test gauges should split major scale divisions when applied to a dead weight tester in good condition, charged with light oil and properly handled. Test gauges are what the term implies and should be used only on a test pump—not on the plant.

Aside from accuracy, the sensitivity of pressure gauges and recorders is effected only by pen tension on the chart as there is really no lag in the instruments. The sensitivity of dial and recording thermometers is a variable depending, as alluded to previously, upon design of bulb, material in bulb, method of immersion, physical properties of temperature medium, range of chart, apparatus, insulation, etc. While impossible to express in percentage, it can be taken for granted that sensitivity is available in a desired degree if a recording thermometer is selected for a particular application.

This brings us to testing of thermometers. It is apropos to mention that the Bureau of Standards considers the proper checking of thermometers a most difficult task. It takes experienced hands and laboratory conditions to make two identical thermometers come within 1 or 2 degrees of each other. However, when testing in the field a very reliable check for a recorder carrying a favorable 212 degree Fahrenheit point, is to immerse the entire bulb—no more, no less—in boiling water at atmospheric pressure. Avoid conduction of heat by keeping the bulb free from bottom or sides of water container. If this is not convenient, use hot oil or water and a chemical testing thermometer of known accuracy, allowing sufficient time for recorder to overcome lag and come to rest. Keep liquid agitated and exclude air currents. The test thermometer should be more sensitive than the recorder and the graduations as great or greater than on recorder charts. It is very difficult to make satisfactory checks in air. Be sure to observe correct elevation of bulbs on mercury and vapor thermometers.

While still on the subject of thermometers, it is well to recommend the use of calorized steel sockets in the presence of sulphur. Their higher costs will prove cheaper than having recorders go dead. At any rate, it is good policy to remove carefully thermometer bulbs occasionally to see if sockets have developed leaks by corrosion or erosion. You strive for plant efficiency, let precaution such as just mentioned, and others, be an expression of efficiency.

Provide shelter for instruments, locate them in safe places, clean the pens occasionally instead of altering their contour or angle. In most cases one drop of ink will last 24 hours and attract less dust to foul the pen. Do not wind clocks to the limit. Do not open the door of a recorder if you are in a hurry. A drop of oil will prolong the life of many parts. Remember, recorders are mechanical devices and should have attention. Also, they are instruments and should have respect; they are not incidental, but vital to the net profits.

Installing Instruments

When installing instruments, exercise a bit of engineering skill. Do not put pressure gauges any way but vertical, provide siphons in connection with steam and hot oil, use liquid seals with corrosive oils or vapors, and put bleeder valves on all pressure instruments because a daily zero check by venting to atmosphere will give some assurance that the gauge or recorder is approximately right.

Put the full length of your themometer bulbs in heat zones—avoid reducers; also, avoid bull nipples where radiation might be successive. When installing recording flow meters, let each setting be engineered and then supervised by one who has knowledge of the manifold factors that affect accuracy. The proper care of orifice metering is no menial task; it is a responsible duty with no room for superficiality.

A few words now about new or uncommon applications is in order. To arrive at boiler plant efficiency, a feed water pump with stroke counter or current meter and a steam header orifice meter should be used as well as an orifice fuel meter. Place both orifice meters in pump house so the static record will reveal the trend of pressures to the operator. A recording thermometer on boiler blowoff would clearly show when boiler was blown and reveal leaky blowoff valve. The same holds good for steam traps on important applications.

Long distance liquid level recorders are adaptable to oil, water and gasoline tanks under atmospheric pressure, while differential recorders (float type) are used for liquid level on boilers and tanks under pressure. High and low electrical alarm attachments are applicable to all recorders.

A differential recorder would serve well

RECEIPTS OF CALIFORNIA OILS, PETROLEUM IMPORTS, SEPTEMBER

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the month of September totaled 3,165,000 bbls., a daily average of 105,500 bbls., compared with 2,723,000 bbls., a daily average of 87,839 bbls. for the month of August.

Receipts at Atlantic and Gulf ports for the week ended October 2 totaled 546,000 bbls., a daily average of 78,000 bbls., against 828,000 bbls., a daily average of 118,286 bbls. for the week ended September 25.

CALIFORNIA OIL RECEIPTS AT ATLANTIC AND GULF COAST PORTS
(Barrels of 42 gallons)

	Total Month September	Total Month August	Week Ended Oct. 2	Week Ended Sept. 25
At Atlantic Coast Ports:				
Baltimore	315,000	460,000	.....	.....
Boston	216,000	322,000	.....	144,000
New York	1,633,000	771,000	234,000	355,000
Philadelphia	662,000	550,000	133,000	234,000
Others	339,000	*620,000	79,000	95,000
Total	3,165,000	2,723,000	546,000	828,000
Daily average	105,500	87,839	78,000	118,286
Distribution of Total California Oil Receipts is as follows:				
Crude	723,000	1,077,000	253,000	74,000
Gasoline	650,000	747,000	75,000	384,000
Gas oil	437,000	494,000	70,000	.....
Fuel oil	1,257,000	347,000	90,000	370,000
Lubricating	58,000	58,000	58,000	.....
Total	3,165,000	2,723,000	546,000	828,000

*Revised.

According to figures collected by the American Petroleum Institute, imports of crude and refined oils at the principal ports for the month of September totaled 5,384,000 bbls., a daily average of 179,467 bbls., compared with 6,676,000 bbls., a daily average of 215,355 bbls. for the month of August.

Imports at the principal United States ports for the week ended October 2 totaled 1,199,000 bbls., a daily average of 171,286 bbls., compared with 2,007,000 bbls., a daily average of 286,714 bbls. for the week ended September 25.

IMPORTS OF PETROLEUM AT UNITED STATES PORTS
(Barrels of 42 gallons)

	Total Month September	Total Month August	Week Ended Oct. 2	Week Ended Sept. 25
At Atlantic Coast Ports:				
Baltimore	498,000	679,000	95,000	298,000
Boston	200,000	142,000	145,000	135,000
New York	2,497,000	2,476,000	401,000	*851,000
Philadelphia	41,000	165,000	41,000	.....
Others	621,000	581,000	196,000	211,000
Total	3,857,000	4,043,000	878,000	1,495,000
Daily average	128,567	130,419	125,429	213,571
At Gulf Coast Ports:				
Galveston district	285,000	605,000	58,000	111,000
New Orleans and Baton Rouge	1,077,000	1,778,000	238,000	261,000
Port Arthur and Sabine district	75,000	160,000	25,000	50,000
Tampa	90,000	90,000	.....	90,000
Total	1,527,000	2,633,000	321,000	512,000
Daily average	50,900	84,936	45,857	73,143
At All United States Ports:				
Total	5,384,000	6,676,000	1,199,000	2,007,000
Daily average	179,467	215,355	171,286	286,714

*Revised.

connected at inlet and outlet of heat exchangers or other units, measuring drop in pressure; building up would indicate scaling or obstruction. A differential recorder on lean oil header would definitely aid operator in maintaining a definite flow. Their use on towers would reveal an unbalanced flow at a glance. Dial type flow indicators also are used on this service. The really progressive superintendent should be interested to know that successful flow controllers are available. A mere setting of a hand on the recorder face gives a definite flow volume per unit time. Gas or air pressure reduced to 15 pounds is put to work by a control head valve in a differential recorder functioning on an orifice setup. The air or gas pressure operates a full floating controlled valve in the same line of flow as the orifice set-up or in a steam line to the circulating pump. The proper equipment properly engineered will give a uniform throttled flow without any shock to the circulating pump or building up of pressure. Limited space precludes further comment.

Temperature control functioning on a basis similar to the above has been used to economic advantage for dephlegmator control for some time. Holding the temperature within 2 to 4 degrees is not a myth. Have no fears for the success of automatic control, if your plant is being successfully manually controlled. Automatic control will not, however, correct plant evils. A similar system of pressure control works with equal success.

Plants which make compression gasoline and allow it to expand from high pressure back into the absorption condenser outlet often experienced freezing up. A temperature controller can cause hot gas from compressor to by-pass the compressor condenser coils and go direct into the spray line.

Distribution of Load

An application of recording thermometers to compressor exhaust ports will clearly record the distribution of load between cylinders. If applied to exhaust manifold a rise in temperature for a given load will indicate faulty timing, ignition, or fuel adjustment. A gas machine gauge or low pressure recorder calibrated in inches water pressure have a valve on compressor fuel lines.

Speaking of compressors brings to mind the possibility of air leakage, particularly on old gathering lines. A gas analyzer at the plant would serve to show the per cent of air in the gas. The analysis of gases in other industries by thermal-conductivity and recorded electrically has been done successfully and can no doubt be adapted to the detection of per cent air in gas lines if of sufficient importance.

Recording instruments are vital to the all-important objective—net profits. They are the compass for a plant operator. They chart the sea for the plant superintendent. They show him at the end of a day's run whether the operators are steering straight.

GAS LIFT PRINCIPLE USED IN MID-CONTINENT

(Continued from Page 96)

can be obtained when the lift is operating at 2,000 pounds per day is then 30 per cent. At less than 2,000 pounds per day, the losses will be changed and the efficiency correspondingly altered.

The isothermal expansion of air is practically the same as that of a perfect gas, and the quantity of the air at sea level required to lift 1 gallon of water is found by the following formula:

$$Q = \frac{8.55 \times L}{144 \times 14.7 \times \log_e \frac{P_2}{14.7}}$$

where Q = number of cubic feet of air to raise 1 gallon to height L;

L = feet of lift; and P_2 = absolute pressure in pounds per square inch at end of eductor.

For the conditions assumed in the problem first stated, L = 2,190 feet and P_2 = 300 + 14.7 = 314.7 pounds per square inch. Then

$$Q = \frac{8.35 \times 2190}{144 \times 14.7 \times \log_e \frac{314.7}{14.7}} = 2.815 \text{ cu. ft.},$$

which is the quantity of compressed air required to lift 1 gallon of water at sea level under pressure of 300 pounds when there are no losses. In the case assumed, the efficiency is 30 per cent and the quantity of air required is 2.815 + 0.30 or 9.383 cubic feet for 1 gallon of water. For oil of 0.85 specific gravity, the quantity required is 9.385 × 0.85, or 7.977 cubic feet per gallon; 1 bbl. would require 7.977 × 42, or 385 cubic feet.

In the event that gas is used instead of air, the deviation of compressibility from a perfect gas must be taken into account. The analysis of the gas must be obtained before this deviation can be determined. The method of determination has been described by Burrell and Robertson in publications of the United States Bureau of Mines.

Let us suppose that the gas has an analysis that requires 375 cubic feet to lift 1 bbl. of 35 degree oil and that the gas from the sand amounts to 500,000 cubic feet per day when lifting 2,000 bbls. of oil. The total quantity of gas required per day is 375 × 2,000, or 750,000 cubic feet. Deducting the 500,000 cubic feet that is being furnished by the sand, leaves 250,000 cubic feet per day that must be furnished by the compressor. If the volumetric efficiency of the compressor is 80 per cent when compressing to 300 pounds per square inch, the displacement capacity of the compressor must be 250,000 + 0.80, or 312,500 cubic feet per day, or 217 cubic feet per minute.

Data on Control of Gas Accompanying Oil

Orifice meters were placed on both the gas-input line and the gas-discharge line of some of the wells in order to determine the quantities of gas consumed per barrel of oil during the operation. The readings on the input-meter chart are fairly satisfactory, but in some cases where the discharge is fluctuating to any extent, the oscillations of the differential pressure needle are rather severe and the readings are not as accurate as could have been desired, this condition making for some apparent discrepancies. However, the general tendencies afford some valuable information on control of the gas accompanying the oil as will be noted in Table 1, which gives data on two of these wells.

It will be noted that at Well 1 there was, in general, a decrease in consumption of gas per barrel of oil lifted as the quantity lifted more nearly approached the efficient capacity of the eductor. The gas accompanying the oil from the sand showed a gradual decrease per barrel of oil, dropping from 939 to 667 cubic feet per barrel; and in Well 2 the quantity of gas was reduced to 377 cubic feet per barrel. These quantities of 667 and 377 cubic feet can be still further reduced by closer design to meet the exact conditions. In a paper read before the Federal Oil Conservation Board on February 10 and 11, 1926, James O. Lewis estimated that the quantity of gas accompanying a barrel of oil taken as an average in all classes of wells is about 1,500 cubic feet. G. O. Smith states[1] that at Dominguez Hill the input gas under 260 pounds pressure averages about 1,100 cubic feet per barrel of oil, which with the 1,200 cubic feet, accompanying the oil makes a total of 2,300 cubic feet required to lift a barrel of oil to the surface, and this is compared with the natural ratio of 2,850 cubic feet per barrel for that field.

The gas-oil ratios afford a good basis for comparison when conditions of submergence, lift and quantity of fluid are identical; when any of these conditions are varied the efficiency factor should be employed. The efficiency factor is based on the foot-pounds of work performed in lifting a barrel of liquid to the surface compared with the foot-pounds of energy stored in the gas under the pressure obtaining at the lower end of the tubing. In Table 1 it will be noted that as the efficiency factor is increased, the quantity of gas taken from the sand per barrel of oil is decreased. It will be noted in Table 1 that the quantity of gas from the sand in Well 2 was considerably less than in Well 1. I suppose that the character of the sand, porosity, etc., makes for this difference. The quantity of gas that is lacking in the oil to raise it to the surface must, of course, be made up by the compressors, and it is desirable to confine the gas coming from the sand to that dissolved in the oil raised, so far as it is possible to do so, making up the deficiency by the compressors.

Use of Back Pressures

It is generally supposed that back pressures in a new well result in a lower consumption of gas per barrel of oil, rather than when no attempt at control is made, and in an address before the American Institute of Mining Engineers in 1925, T. E. Swigart has given some valuable data on the use of back pressures in the Dominguez Hill Field, California. Let us compare the two Wells A and G, noted by Mr. Swigart which were flowing through a bean under conditions of pressure and lift approximating those for Wells 1 and 2 in the Mid-Continent Field. The figures for these two wells are given in Table 2.

The gas-oil ratios in Table 2 are about as satisfactory as can be obtained when employing back pressures at gage pressures of 225 and 260 pounds, respectively. The quantity of gas dissolved in a barrel of oil under these conditions of pressure is about 44 and 39 cubic feet, respectively, consequently there must be abstracted from oil not lifted 1,731 cubic feet of gas for each barrel of oil lifted in Well A, and 2,251 cubic feet in Well G. A comparison of these figures with those obtained in Wells 1 and 2 in the Mid-Continent, and with the work now being done at Dominguez Hill as noted by G. O. Smith, is found in Table 3.

[1]The Oil and Gas Journal (Aug. 28, 1926).

TABLE 1.—GAS-CONTROL DATA ON TWO WELLS IN MID-CONTINENT FIELD

Well	Period	Oil per Day, Bbl.	Pressure Gage, Lb.	Gas per Bbl. Oil—From Compressors, Cu. Ft.	Gas per Bbl. Oil—From Sand, Cu. Ft.	Gas per Bbl. Oil—Total, Cu. Ft.	Volume Gas at 100 Per Cent Efficiency, Cu. Ft.	Efficiency, Per Cent.
1	May 19 to 28	1,433	250	261	939	1,200	154.67	12.9
1	May 29 to June 7	1,619	250	345	853	1,198	160.14	13.4
1	June 8 to 17	2,128	250	216	699	915	156.95	17.2
1	June 18 to 24	2,497	250	222	667	889	160.14	18.0
2	July 1 to 10	404	250	606	438	1,044	149.48	14.3
2	July 11 to 17	829	250	746	662	1,408	160.40	12.8
2	July 18 to 24	1,891	250	526	473	999	184.63	18.6
2	July 25 to 30	1,994	250	445	377	822	176.44	21.4

TABLE 2.—GAS-CONTROL DATA ON TWO WELLS IN DOMINGUEZ HILL FIELD

Well	Production per Day, Bbl.	Gage Pressure, Lb.	Gas per Bbl.—Consumed, Cu. Ft.	Gas per Bbl.—Required at 100 Per Cent Efficiency, Cu. Ft.	Efficiency Obtained, Per Cent	Gas Required to Lift 1 Bbl. at Acceptable Efficiency, Cu. Ft.
A	392	250	1,775	143.2	8.1	159
G	741	225	2,200	148.2	6.0	823

TABLE 3.—COMPARISON OF OIL-WELL GAS-CONTROL DATA

Well No.	Gas per Bbl. Oil Input, Cu. Ft.	Gas per Bbl. Oil from Sand, Cu. Ft.	Gas per Bbl. Oil, Total, Cu. Ft.	Gas Dissolved in Oil, Cu. Ft. per Bbl.	Gas Abstracted from Oil Not Lifted, to Lift 1 Bbl. Oil, Cu. Ft.	Saving over Natural Ratio of 2,850 Cu. Ft. per Bbl. Oil, Cu. Ft.	Oil That Can Be Moved to Well by Gas Saved, Bbl.
A	....	1,775	1,775	44	1,731	1,075	0.6
G	....	2,290	2,290	39	2,251	560	0.25
(Dominguez Hill)	1,100	1,200	2,300	44	1,156	1,650	1.38
1	222	667	889	44	623	2,182	3.27
2	445	377	822	44	333	2,473	7.42

Initiation of Control and Period of Application

The proper time to begin application of control over the gas would appear to be at the time the well is first brought in, and this control should be continued until the pressure has declined to a point too low for the gas lift to operate with any acceptable degree of efficiency. The first stages of flowing do not require the introduction of compressed gas since there is usually considerably more gas dissolved in a barrel of oil than is necessary to raise a barrel to the surface. After pressure and volume of gas have declined to a point where too much gas is being drawn from distant part of the sand, a compressor plant should be placed in service to make up the deficiency.

Petroleum First Aid Meet Will Be Held in Tulsa A. P. I. Week

The Petroleum Safety Council of the Mid-Continent Oil & Gas Assn., will hold its second annual petroleum first aid meet as a part of the educational program of the American Petroleum Institute meeting in Tulsa December 7-9. It is expected that at least 20 teams will take part in the competition. The following companies have already entered teams:

Skelly Oil Co., Tidal companies, Phillips Petroleum Co., Barnsdall Refining Co., Twin State Oil Co., Marland Refining Co., Mid-Continent Petroleum Corp., Pierce Petroleum Corp., Roxana Petroleum Corp., Empire companies, Gypsy Oil Co., Continental Oil Co., Independent Oil & Gas Co., and Carter Oil Co. The contest is open to all oil company teams.

The Bureau of Mines has furnished a training corps to instruct the teams and this work is starting at once. The contest will consist of four problems. Last year the Phillips Petroleum Co., team won possession for one year of the large silver loving cup awarded by the International Petroleum Exposition as the first prize and this will be up for competition again this year. Other prizes will be furnished by the National Safety Council the Mines Safety Appliance Co., and the Petroleum Safety Council.

ROCKY MOUNTAIN AREA

(Continued from Page 54)

title to a productive tract on the basis of some old deeds of his ancestors.

Runs From the Fields

	Bbls.
Salt Creek	43,130
Teapot	1,500
Big Muddy	3,340
Grass Creek	3,030
Elk Basin	770
Greybull	20
Rock River	2,730
Notches	180
Rex Lake	250
Lance Creek	1,070
LaBarge	220
Poison Spider	610
Osage	340
Hamilton Dome	1,150
Lander	390
Byron	40
Pilot Butte	40
Lost Soldier	5,140
Perris	80
Simpson Ridge	130
Cat Creek	2,690
Lake Basin	210
Sunburst	18,000
Florence	500
Moffat	3,565
Tow Creek	690
Fort Collins	3,565
Boulder	25
Rangeley	100
Hogback	720
Rattlesnake	1,040
Artesia	3,000
Total	98,265

DAMAGE SUIT DISMISSED

CHICAGO, Oct. 12.—On motion of the plaintiff, the suit of the Independent Oil Men of America against the Standard Oil Co. of Indiana, asking $1,000,000 damages, has been dismissed.

REFINING AND MARKETING

NEW RICHFIELD CO. RESULTS FROM MERGER

The Pacific National Gasoline Co., one of the leading natural gasoline manufacturers on the Pacific Coast, has been absorbed by the Richfield Oil Co. in connection with the merger of a number of other companies now under way there. When the deal is finally completed a new Richfield Oil Co. will have been organized to take over the J. W. Jamison Corp., Southwest Petroleum Corp. and Interstate Oil Corp., producing companies, as well as the Pacific National Gasoline Co. It also is rumored that the Richfield company has an option on all assets of the McKeon Oil Co. not already owned by the company. Under the arrangement J. W. Henderson of Los Angeles, pioneer oil operator of southern California, will become a director of the new Richfield Oil Co., which now is being financed.

The Pacific National Gasoline Co., which already has been absorbed, has six gasoline plants with a total capacity of 57,000 gallons daily. By acquisition of the Jamison company, Richfield will acquire a 7,500-bbl. refinery at Vernon as well as large storage facilities and valuable real estate.

The Richfield Oil Co. already has three refineries with a daily capacity of 36,000 bbls. and a gasoline plant with a capacity of 3,000 gallons.

MARKETING COMPANY ORGANIZING IN LONDON

LOS ANGELES, Calif., Oct. 9.—Organization of the Western Refining & Marketing Co., Ltd., at London, England, to market California petroleum products in Europe has been announced by R. R. Rakestraw, vice president of the Western Oil & Refining Co. of this city. Mr. Rakestraw has just returned to Los Angeles from London, where he has been for some time arranging marketing connections.

The new London marketing company, which is a subsidiary of the Los Angeles company, has established connections with several Rumanian refineries to supplement the products from the company's refinery at Wilmington, Calif., until the company can increase its own production.

OKLAHOMA GASOLINE TAX

OKLAHOMA CITY, Okla., Oct. 9.—Gasoline tax receipts in Oklahoma for the first quarter of the fiscal year beginning July 1 and ending September 30 amounted to $1,805,284.96. This was an increase of $288,072.06 over the same period of 1925 when tax collections totaled $1,517,212.90. Based on the 3-cent tax, the average daily consumption of gasoline in Oklahoma during the quarter mentioned was 620,000 gallons.

STANDARDIZING COAST PRICES

LOS ANGELES, Calif., Oct. 9.—The General Petroleum Corp. is adopting a policy of standardizing its retail gasoline prices on the Pacific Coast, according to Lionel Barneson, president. As near as possible prices will be uniform at all points.

BUYS ST. JOSEPH STATIONS

The Mid-Continent Petroleum Corp. has bought the service stations of the Central Oil & Gas Co. of St. Joseph, Mo. Rupert Cox was the president of the organization. The Mid-Continent Petroleum Corp. will continue to add to its string of stations as opportunity offers in cities favorably located with regard to deliveries from the refinery at West Tulsa.

CALIFORNIA DIFFERENTIAL CUT TO REMEDY MARKETING EVILS

LOS ANGELES, Calif., Oct. 8—The California gasoline situation continues uncertain. On October 4, the Richfield Oil Co. reduced its retail price 1 cent throughout its marketing territory to meet competing companies, its tankwagon price remaining unchanged. This was the last company to come in line and now independent service stations throughout California are receiving only a 3-cent differential between the price at which they must purchase and sell their gasoline, regardless of which standard brand they handle. During the past week gasoline prices were reduced 4 cents in Washington, Oregon, Nevada and Arizona, which with California, comprises the far western marketing field. Tankwagon prices are 3 cents below service station prices in these states also.

Those operating independent service stations maintain they will be unable to continue in business if forced to sell on only a 3-cent margin. On October 5, the Independent Service Stations Association of California, meeting at Los Angeles, and numbering over 2,000 members, announced its determination to do all in its power to have the old 4-cent differential re-established. A delegate from San Diego told how the independent dealers had got together through this organization and contributed to a common fund used in running large advertisements in local papers claiming the present schedule forcing them to operate on a 3-cent differential was the result of "unfair competition on the part of the large marketing companies" and appealing to the public to support them in their effort to continue in business by patronizing their stations even though forced to pay 1 cent more per gallon for gasoline. In San Diego at present the company-owned service stations are selling a gasoline at 1 cent a gallon less than independent dealers. The independents claim they have lost no business due to this move and are strongly recommending dealers in other parts of the State follow their lead in raising the retail price 1 cent per gallon.

Evils to Be Overcome

Just what effect this move by the independent operators will have is problematical. It is doubtful the oil companies will increase the differential as the independent dealers wish at this time, because there are certain serious marketing evils which must be overcome before the market will again assume the strong position and the re-establishment of a 4-cent differential would not be a move towards rectifying these evils.

During the past few years, service stations have sprung up so quickly, especially in southern California, that in spite of the very satisfactory increase in demand for gasoline, sales have had to be split up to an extent that service stations business has not been on a very profitable basis. Company-owned stations naturally have felt the increased competition and some marketers believe the late price readjustment has been in part aimed at the independent service station.

Estimates made by the trade place the number of service stations in Los Angeles County at about 3,000. On the basis of 580,000 motor vehicles in the county there would be one service station to serve about every 193 automobiles. Last year there was an average of 562 gallons of gasoline consumed by each automobile in the State. On this basis, each service station in Los Angeles County, if sharing equally in the available business would sell an average of 34,000 gallons of gasoline a year. Figuring a 3-cent profit on this business, the annual profit on gasoline sales would be only slightly over $1,000. It can readily be seen that there are entirely too many service stations operating to make this business profitable and that if the number is reduced, stations remaining in the field would enjoy an increase in volume and the situation on the whole would assume a more stable condition.

Just how long the present low gasoline prices will remain in effect or just what future market developments will be is very hard to foretell. If the larger oil companies are about to reach some agreement as to marketing gasoline and follow this agreement closely, it will not be long before the situation will strengthen materially. However, if some of the companies decide to spread the differential slightly, as was being done in several cases before the recent readjustment of prices, further reductions might be made before competition can be restored to a fair basis. In any event, the independent dealer is facing a serious situation and he will undoubtedly be the first to really feel the effects of the reduced prices.

CAR LOT MARKETERS MEET

CHICAGO, Oct. 9.—The car lot marketers held their first fall meeting at the Auditorium Hotel. During the summer, meetings were held once a month but it was felt this was a mistake as members lost the connection and interest which comes from more frequent meetings. The next meeting will be held on October 19 and the subject of discussion will be "What Can Be Done to Improve Relations Between Marketers and Refiners." There was a general discussion of this subject at the present meeting and many good ideas were brought out which will be discussed further at the next meeting. The exchange of credits is said to be successful.

P. & R. APPOINTMENTS

CHICAGO, Oct. 11.—A. T. Smith, who has been in charge of the Chicago division of the Producers & Refiners Corp., with offices in the McCormick Building, has been promoted to assistant general sales manager and will make his headquarters at Denver, Colo. Brown L. Meece has been appointed manager of the Chicago division. Mr. Meece formerly was with the Argos Petroleum Co. of Kansas City and with the Leader Oil Co., of Dubuque, Iowa.

NEW HOUSE ORGAN

To establish closer relationship among employes and between departments, the Barnsdall Corp. has started publication of a monthly magazine. The publication, the first issue of which was printed this month at Tulsa, is devoted to the interests of all the various Barnsdall companies and subsidiaries.

TEXAS GASOLINE TAX

AUSTIN, Tex., Oct. 9.—By a vote of the State Senate the Thirty-ninth Texas Legislature, which will adjourn October 12, definite action on the Dale bill to increase the gasoline tax from 1 to 3 cents has been postponed until the Fortieth Legislature which convenes in January.

BUYS ILLINOIS BULK STATIONS

The Sinclair Refining Co. has bought the bulk and filling stations of the A. B. James Service Stations with headquarters at Belvidere, Ill. The plant includes two bulk and several stations in the surrounding towns.

P. & R. WILL HANDLE THE TIDEWATER OILS

Under a new marketing arrangement with the Tide Water Oil Sales Corp., the Producers & Refiners Corp. of Denver, Colo., will distribute Veedol motor oils and greases in Idaho, Utah, Wyoming, Colorado, Arkansas and Tennessee. The Producers & Refiners Corp. is a producing, refining and marketing company with operating refineries at Parco, Wyo., and West Tulsa, Okla. It will handle the Tide Water oils both through its own distribution and through that of its subsidiaries, the Independent Gas & Oil Co., with headquarters at Salt Lake City, Utah; the Producers & Refiners Corp. of Tennessee, and the Hagan Oil Co. at Shattuck, Okla.

GREAT NORTHERN ROAD CONTRACTS FOR FUEL OIL

CASPER, Wyo., Oct. 9.—The Great Northern Railroad is reported to have contracted with the California Petroleum Co. to take all the fuel oil output of the latter's refinery at Sunburst, Mont. This would amount to about 4,000 bbls. daily. The contract is to run four years. The total cost to the railroad company will amount to about $15,000,000.

This contract will enable the California Petroleum Co. to start off with the cost of its recent purchase of the O'Neil interests, by which it acquired the refinery and leases in the Sunburst Field practically written off within three months after the purchase.

COSDEN SALES TO BE MID-CONTINENT CORP.

The name of the Cosden Sales Corp. will be changed after January 1, 1927, to the Mid-Continent Petroleum Corp. of Missouri. There will be no change in management or policies. The desire is to make the connection between the Cosden Sales Corp. and its parent company more obvious.

There has been some confusion in the minds of some oil men at times as to the relation between the two companies and with the change of name this cannot happen. The Cosden Sales Corp. has been the exclusive sales organization for the products of the Mid-Continent Petroleum Corp.'s refinery and under the new name this fact will be plain.

SHREVEPORT MARKET ONLY MARKING TIME

SHREVEPORT, La., Oct. 9.—Shreveport refined markets failed to gain any strength last week and only marked time. Movement of U. S. Motor grade gasoline was slow generally although one refiner reported an improvement in his business. Rainy weather during the week had its effect on the gasoline market. Natural gasolines were weaker and off fractionately in price. Kerosene moved sluggishly. Gas oils and distillate were inactive. Fuel oil was mediocre.

FILM STORY OF DROP OF OIL

The Mid-Continent Petroleum Corp. has begun to film "The Story of a Drop of Oil." The film will show the entire process of producing, refining, transporting and marketing all petroleum products. It is being prepared under the supervision of L. V. Surtees of the organization on the properties and in the refinery of the Mid-Continent Petroleum Corp. When completed it will be available to the distributing agents of the organization for display at meetings of sales force, annual conferences and the like.

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Brief Items for Plant Operators

INDIANA CO. OFFICIALS IN MOUNTAIN STATES

CASPER, Wyo., Oct. 11.—A very extensive survey of oil fields and refineries of Montana and Wyoming was made by the Standard Oil Co. of Indiana officials on their visit from Chicago to this district last week. Casper and Denver officials, both of the Standard Oil Co. and the Midwest Refining Co., joined the party on the tour.

Members of the party representing the Standard Oil Co. of Indiana were R. W. Stewart, chairman of the board; Dr. W. M. Burton, president; Beaumont Parks, E. G. Seubert and Allen Jackson, vice presidents; E. J. Bullock, director of purchases, R. H. McElroy, director of traffic; C. J. Barkdull, general auditor; J. J. Nevotti, secretary to Colonel Stewart, and T. S. Cook, manager for the company in the Rocky Mountain area.

The Midwest company officers on the trip were T. A. Dines, chairman of the board; John D. Clark, president; R. S. Ellison, M. K. Blackmer, H. G. Naylor and H. C. Bretschneider, vice presidents; F. D. Anderson, general counsel; A. W. Peake, general superintendent; R. C. Coffin, chief geologist; N. S. Wilson, manager of production; J. A. Carroll, general auditor; W. R. Finney, manager of gas and electricity; John Bartram, Wyoming division geologist; Victor Hendrickson, Montana division geologist; G. B. Jenkinson, vice president of the Midwest Exploration Co.; Wayne Esmay, Midwest company manager at Shelby; B. L. Warren, manager of the Greybull refinery; Herbert E. Dailey, manager of the land department, and M. O. Danford, tax commissioner.

Others in the party were John C. Howard, president of the Utah Oil Refining Co.; James Owen, president of the Salt Creek Consolidated Oil Co.; and H. H. Brooks, secretary of the Salt Creek Producers Association. The latter companies are subsidiaries of the Midwest or Standard companies.

BRITISH IMPORTS INCREASE

British imports of petroleum products during the four weeks ending September, 1926, totaled more than 6,171,000 U. S. bbls., a considerable increase over those for any previous four weeks' period of the current year. The increase appeared in the imports of gasoline, kerosene and gas and fuel oils. The United States furnishing 98.6 per cent of all the lubricating oil imported, 68 per cent of the gasoline, 41 per cent of the gas oil and 29 per cent of the fuel oil and kerosene. Considerable quantities of fuel oil were received from Mexico, Persia and Curacao. Gas oil was received from Russia for the first time this year.

PAVING AIDS SALES

A feature of the rapid economic growth experienced by the Republic of Salvador during the past few years has been a remarkable increase in imports of petroleum products. In great measure, this improvement may be attributed directly to the general paving of the city of Salvador, which has resulted in the rapid increase in importation of automotive vehicles.

MANSFIELD, LA., PLANT

SHREVEPORT, La., Oct. 11.—The Natural Gas Products Co. is erecting an absorption gasoline plant on the Tarver lease, near Mansfield, La. The plant will have a capacity of 4,000 gallons daily.

PURE OIL IMPROVEMENTS

The Pure Oil Co. is completing an extensive improvement and enlargement program at its refineries. The Marcus Hook plant has been practically rebuilt in the last year and a half and its capacity increased from 3,000 to 10,000 bbls. daily; the Heath plant has been enlarged from 3,000 to 5,000 bbls. daily capacity, and additional equipment has been installed at the Muskogee, Cabin Creek and Ardmore refineries.

BARNSDALL IMPROVEMENTS

Barnsdall Refineries, Inc., is completing a number of improvements at its Barnsdall and Okmulgee plants. At Barnsdall a new boiler house has been finished and a compounding plant will be ready within 30 or 40 days. At Okmulgee, a cross-still gasoline recovery plant was put in operation the first of the month. Three pipe stills are under construction at this plant and the Cross pressure stills have been reconstructed to produce "Super-Gas."

SHIPMENTS FROM CASPER

CASPER, Wyo., Oct. 11.—Shipments of petroleum products from Casper totaled 7,400 cars during September. This was an increase of 1,415 cars over the August shipments. The Standard Oil Co. of Indiana refineries alone loaded out 9 solid trainloads of gasoline destined for Baton Rouge, La.

ANGLO-PERSIAN TANKERS

The Anglo-Persian Oil Co. has added another tanker to its fleet. This brings the total to 64.

I. C. C. HEARING SET ON TANK CAR CHANGES

WASHINGTON, D. C., Oct. 11.—The Interstate Commerce Commission has set October 26 as the date for the hearing of objections to the proposed revision in regulations for the transportation of explosives and other dangerous articles as suggested at a session of the commission October 6.

Refiners and natural gasoline manufacturers are particularly interested in the proposed changes in tank car regulations and specifications, all of which are detailed in the commission's bulletin No. 3,666.

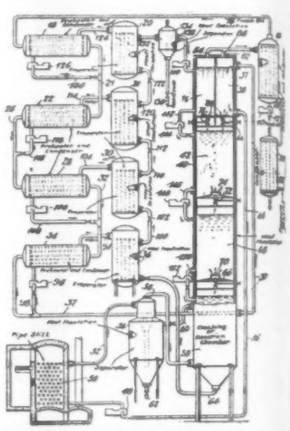
CUSHING PLANT ADDITIONS

CUSHING, Okla., Oct. 9.—Two 90 horsepower Superior engines with Ingersoll-Rand compressors are being installed at the Cushing Refining & Gasoline Co.'s gasoline plant in Section 32-18-14. Gas from the Mehan district is being supplied the plant, and a 10-inch welded pipeline is being laid to the field to supply additional gas needed with the increased capacity of the plant.

Recent Patents

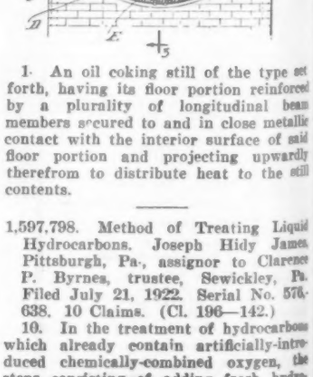
1,597,674. Distillation of Oil. Henry L. Doherty, New York, N. Y., assignor to Doherty Research Co., New York, N. Y., a corporation of Delaware. Filed November 22, 1922. Serial No. 602,508. 22 Claims. (Cl. 196—49.)

1. A process of treating high boiling point hydrocarbons to produce lower boiling point hydrocarbons therefrom, comprising circulating oil under pressure through a heater, separating vapors from the heated oil, passing the vapors and oil through a cracking chamber while under pressure in counter-current paths, passing residue oil from the cracking chamber to an evaporator and distilling it therein by reducing the oil pressure, condensing the residue vapors by a heat interchange with untreated oil, returning the residue oil from the evaporator to the cracking chamber and condensing vapors leaving the cracking chamber.



21. An oil distilling apparatus comprising a pipe still, a cracking chamber, means for forcing oil from the pipe still into the cracking chamber, an evaporator connected with the cracking chamber, a condenser connected with the evaporator, means to conduct condensate to the pipe still, a conductor for leading oil from the evaporator back to the cracking chamber, and a condenser connected with the cracking chamber.

1,597,469. Oil Coking Still. Jens O. Jenson, Baltimore, Md. Filed January 20, 1921. Serial No. 438,607. 2 Claims. (Cl. 196—104.)



1. An oil coking still of the type set forth, having its floor portion reinforced by a plurality of longitudinal beam members secured to and in close metallic contact with the interior surface of said floor portion and projecting upwardly therefrom to distribute heat to the still contents.

1,597,798. Method of Treating Liquid Hydrocarbons. Joseph Hidy James, Pittsburgh, Pa., assignor to Clarence P. Byrnes, trustee, Sewickley, Pa. Filed July 21, 1922. Serial No. 576,638. 10 Claims. (Cl. 196—142.)

10. In the treatment of hydrocarbons which already contain artificially-introduced chemically-combined oxygen, the steps consisting of adding fresh hydrocarbon to the same and then thermally decomposing the mixture.

(Additional Patents on Page 166)

AMONG THE TECHNICAL MEN

A man who understands every angle of modern refining, including both construction and operation, is James H. Heslar, construction superintendent of the engineering department of the Pure Oil Co. One of the largest construction jobs ever undertaken by the Pure Oil Co. only recently was completed by Mr. Heslar in the rebuilding of the Marcus Hook plant. This construction was under way for a year and a half, and in the work practically a complete new refinery, capable of running 10,000 bbls. of crude daily, was erected. At one period of construction approximately 1,200 men were under Mr. Heslar's supervision.

James H. Heslar

Mr. Heslar first entered the employ of the Pure Oil Co. at its Muskogee, Okla., refinery in May, 1917. This reallly was his first connection with a refining company but he has been engaged in general construction work before this, having assisted in the construction of a number of large office buildings in San Antonio, Tex.

The following year, 1918, after going to Muskogee, he was made assistant superintendent of the plant, which position he held until being transferred in April, 1923, to the Smith Bluff refinery, then under construction. When this plant was completed he was made assistant superintendent. In May, 1925, he was transferred to the Marcus Hook plant and assumed full charge of construction.

Mr. Heslar is a native of Buffalo, Mo., where he obtained his early education. He lived on a farm until 1903, when he accepted a position with the company engaged in construction at San Antonio.

UNIT OPERATION IN NEW POOLS BENEFICIAL

(Continued from Page 96)

some of the old fields, stop-cocking the wells has had wonderful results; that is, when the wells get down past the prolific flowing stage, they are shut in tight for a period until the pressure builds up and then the oil is flowed off and the well shut in again, but the use of this principle also is limited unless the neighbors operate in like manner, as maintaining pressure on one property would force oil to offset wells.

Flowing By Gas Lift

The trend at the present time is toward flowing the wells by gas-lift. The cost of installing pumping equipment followed by the costly and troublesome operation, particularly in deep wells, has focused attention more and more to this means of production. Moreover, it has been shown that under favorable conditions and proper control both the daily and ultimate recovery can be increased. But the use of the gas-lift principle is now limited to the relatively short period in the life of the well between the period of natural flow and the period when the rock pressure becomes less than the pressure necessary to lift the oil out of the well. When this point is reached, the gas pressure put in at the top of the well will keep the oil from entering the hole and it has, at times, caused nearby pumping wells to start flowing again. By maintaining the rock pressure in the sand by introducing artificial pressure through some of the wells, the gas-lift can be kept going much longer and at the same time both the daily production and ultimate recovery can be greatly increased. Such a method could not be successfully applied except on large tracts.

In a field that has free gas in the upper part of the sand, a tremendous waste of both the oil and of the natural forces can take place, if the field is not properly developed and operated. Under competitive conditions the operator who owns a lease in the gassy part of the pool will drill his wells and vent the gas in order to draw as much oil as possible to his property. If he drills a well that shows gas only at the start but later blows into oil, he congratulates himself, but such a procedure is exceedingly harmful to the common interests and the small gain of the individual operator is overshadowed by the losses sustained by the pool. Under such conditions the pressure in the gassy parts of the sand will blow off quickly and then oil will feed into this unsaturated part of the sand which will mostly be wasted. The oil naturally recoverable is usually less than 20 per cent, and of this portion, 80 per cent is left unrecoverable in its new position; in other words, if 20 per cent is a normal natural recovery for the pool, a well that has blown into oil is recovering only 20 per cent of 20 per cent, or at the rate of about 4 per cent. For every barrel recovered from such wells, perhaps four barrels of recoverable oil is being dissipated in the former gas sand.

Loss in Production

On the other hand, if the pressure had not been let off of the gassy parts of the pool, the gas would have forced its way through the oil-producing parts of the sand into the wells on the lower part of the structure, and this free gas would have been a means of increasing instead of diminishing the natural recovery. In such a pool, if the natural production was at the rate of one barrel for each thousand feet of gas, the increase in recovery for a million feet of gas blown into the air would have approached 1,000 barrels.

A triple loss is thus sustained by blowing off the free gas in a pool—the loss of recoverable oil by drawing oil into unsaturated parts of the sand, the loss of oil that could have been recovered by letting the gas expand through the oil saturated parts of the sand, and the loss of gas and gasoline. A well in the gassy parts of the structure blowing off ten million cubic feet of gas a day may easily represent a daily loss of 10,000 bbls of recoverable oil from the pool.

The Cromwell Field is the most striking recent example of such a condition. In their report on this field, the Bureau of Mines engineers list 60 wells with a total of 2,046,000,000 feet of gas and 54,849 bbls. of oil initially, or initial productions averaging respectively 34,000,000 feet and 914 bbls., or an average gas-oil ratio of 37,000 feet per barrel of oil. No average figures are available as to the gas-oil ratio in the areas without free gas, but it is reported on one lease as 2,500 feet. If we double this figure it would still indicate that something like 7 bbls. of oil could have been recovered from adjacent parts of the field for each barrel produced from these 60 wells had it been possible to shut them in and cause the gas to vent into the wells in the saturated parts of the field. In addition, there was lost unknowable quantities of oil that were drawn into the gas sand and there dissipated. Had these 60 wells not been drilled, some $3,000,000 might have been saved and the natural recovery from the field increased possibly between 25 per cent and 50 per cent. As it was, those owning these gassy wells felt compelled to operate in a wasteful manner to protect their own companies' interests; yet, the rest of the field could well have given them twice the oil they did produce to shut their wells in.

Situation at Cushing

In a pool with complicated conditions as at Cushing, where there were four important producing oil sands and several minor gas and oil sands, and in which free gas occurred in each one of the parts of each of the four important sands, the opportunities for decreasing expense and at the same time increasing recovery and profits would be particularly important. The history of Cushing is too well known to need repetition here. The writers believe that every informed oil man will agree that under unit control and with the knowledge we now have a tremendously increased profit could have been obtained by the industry from this pool. Besides the profits from savings in costs and increases in production, the price of oil was cut to one-third, both for the oil in this field and all the other fields of this country for a period of nearly 2 years.

Even in fields where no free gas is reported, there will be wide differences in the gas ratios of the wells in different parts of the pool. One of the companies operating whole pools in the East Indies is said to make a practice of drilling in the wells and then shutting in those that have the highest gas ratios. That is, if some wells produce 5,000 feet of gas per barrel while others produce only 1,000 feet, the former wells are shut in or controlled so that the gas will work through parts of the sand that yield more oil for the same expenditure of natural energy.

Rainbow Bend Cited

To illustrate from experience in this country, the Rainbow Bend Pool may be cited. This pool was operated under one management and, as pointed out in the recent Federal Conservation Board report, many economics were applied but the records show that much still remains to be worked out in operating such a pool. In the main portion of the pool, were several wells in gassy areas that came in with both large oil and gas productions, and the gas-oil ratio rose from about 2,500 feet to over 4,000 feet and finally to 6,000 feet per barrel. Meanwhile, the average decline from the field dropped from the previously established rates of decline in inverse ratio to the increase in gas to oil. Later when the pressure had been blown off and the gas-ratio started to decline again, the production started to approach what may be considered as the normal decline, but it seems clear that these few gassy wells must have seriously lessened the total natural recovery of the pool.

In operating a property under artificial pressure, by-passing through the top part of the sand or through the more open parts is a source of some of the principal operating troubles, but the same wastes of energy are possible in a new field under natural pressure. This factor should be as carefully studied in natural recovery as in the use of artificial pressure, but it is obvious that successful efforts to control this trouble cannot be made in a pool divided into 40 and 80 acre tracts.

Henry L. Doherty has shown that besides the mechanical effect that gas has in the sand for forcing oil ahead of it into the hole, it also has a tremendous influence on the viscosity and capillarity of the oil, which must be overcome in expelling the oil from the pores of the sand. From this premise he argues that the gas should be kept dissolved in the oil. These are new facts to the industry, and how they can best be taken advantage of is not clear to the writers. If the pressure is maintained on the oil, the gas cannot be used as an expellant and some other force must be applied. With use of back pressure and stop cocking the gas is used for both purposes, but it is found that in applying back pressure there is a certain differential pressure beyond which the gas ratio increases instead of declines, thus suggesting that the loss in expelling force becomes greater than the gain in the reduction in viscosity and capillarity. Experience in California has shown that under too high back pressure only gas will come from the well. Experimental evidence also indicates that the more soluble gas is mechanically a poor medium for forcing the oil ahead through the sand than the less soluble gas. But exactly how these observed facts relate to Mr. Doherty's findings must be determined by further investigation. To the writers it does not as yet seem clear how the effects on the physical characteristics of the oil can best be taken advantage of, but the presentation of these new facts indicates how little we know as yet of recovering oil and what unkown possibilities remain.

Summary of Best Practices

The writers herewith give what they conceive will be the best practices under present knowledge. As soon as a discovery well is drilled in, a few test wells should be drilled at strategic points to determine the magnitude of the pool and to ascertain the important natural features, from which to formulate a program of development. This would disclose the financial needs and the provisions that should be made for supplies, equipment, etc. as well as the main technical problems. These test wells should then be capped or produced under close control. If a small pool, drilling would be started from one center and the pool drilled up location by location. The distances between locations and their positions on the structure would be determined from this original data and checked as development progressed. If the pool were very large, it might be advisable to drill from several centers, but the effort would be to drill the wells at such intervals of time and at such distances as to meet both the financial needs and so as to avoid undue interference between each well and the location in advance. If gassy parts of the pool were found, they would be avoided, and if lean streaks were found, the spacing could be varied to suit the changed positions. The wells could be produced under such control as would give the lowest gas ratio and as would conform to the financial needs. Plans could be made early in the life of the field for gasoline plants and for the utilization or sale of surplus gas, for enough information would be obtainable early in the life of the pool to build with confidence plants that would take the gas as fast as it was developed. The gasoline plants would be designed to fit in later as compressor plants for forcing gas or air back into the ground and for flowing wells. As soon as the wells ceased to flow satisfactorily under natural pressure, gas from the compressor plant supplemented, if necessary, by additional high pressure machinery would be piped to these wells, and when returned with the oil would be piped back to the plant. Later on when the pressure of the first part of the field drilled had been depleted, the compressed gas would be forced into some of the wells both to increase recovery and to sustain the rock pressure so that the gas-lift could be continued in use. The gasoline plant would then become a combination gasoline plant and pressure plant for putting artificial pressure on the sands and for flowing the wells. Later on, when the sand had further depleted, it might be necessary to change the method of gas-lift and use either a staged or intermittent air-lift, but the writers believe that under proper control it would never be necessary to install a pump in any of the wells.

By such a method of development the field would pass without break from natural pressure to artificial pressure through a far better sustained production and without going through the agonizing period of low production and high costs, which fields go through now before rejuvenating processes are applied.

The financial gains from unit operation should be very great, especially in such a field as Cromwell, where through the combined savings in wells, equipment, and operating costs, and the increases in income from the additional oil, gas, and gasoline sold might readily increase profits from operations several times. The cumulative effects of many savings on one side and many increases in income on the other are surprisingly large. Thus in an assumed case of a pool of 1,000 wells with a total development cost of $40,000,000 producing $80,000,000 worth of oil, gas, and gasoline at a total expense of $20,000,000, the profit would be $20,000,000, but if the development cost could be reduced a fourth to $30,000,000 and the gross income from the three products increased 50 per cent to $120,000,000 with no greater expense by reason of improvements in production methods, the profits would become $70,000,000, three and one-half times the other profits.

The public gain would be as great and the economies in development and production together with the increases in the recovery of oil, gasoline, and gas would result in lower cost of petroleum products to the consumer and longer lived and more dependable supplies.

MID-CONTINENT SELECTS EXECUTIVE COMMITTEE

(Continued from Page 32)

Constantin Refining Co.; J. H. Markham, Jr., Tulsa, Okla.; E. W. Marland Marland Cos.; D. B. Mason, Tulsa, Okla.; Henry McGraw, Gypsy Oil Co.; J. J. McGraw, Exchange National Bank, Tulsa; C. L. McMahon, Okmulgee, Okla.; D. F. McMahon, Southwestern Petroleum Co.; P. M. Miskell, Empire Refineries; E. H. Moore, Independent Oil & Gas Co.; Charles F. Noble, Tulsa, Okla.; Charles Page, Sand Springs, Okla.; Clyde Pape, Selby Oil & Gas Co.; F. B. Parriott, Transcontinental Oil Co.; C. B. Peters, Peters Petroleum Co.; Waite Phillips, Tulsa, Okla.; P. A. Pielsticker, Skelly Oil Co.; S. S. Price, Dixie Oil Co.; W. R. Ramsey, Oklahoma City; E. B. Reeser, Barnsdall Oil Co.; G. S. Rollin, Roxana Petroleum Corp.; Lee Scott, White Eagle Oil & Refining Co.; R. C. Sharp, Oklahoma Natural Gas Co.; J. J. Shea, Shea & Shea, Tulsa; W. G. Skelly, Skelly Oil Co.; T. B. Slick, Slick Oil Co.; J. W. Sloan, International Supply Co.; Harry H. Smith, Mid-Continent Association; R. H. Smith, Philadelphia, Pa.; George Snedden, Lorraine Petroleum Co.; H. R. Straight, Empire Cos.; C. W. Titus, Tulsa, Okla.; Harry C. Tyrell, Pulaski Oil Co.; James A. Veasey, Carter Oil Co.; J. A. Vickers, Vickers Petroleum Co.; P. G. Walker, Jr., Tulsa, Okla.; L. H. Wentz, Wentz Oil Corp.; Max Westheimer, Westheimer & Daube; W. E. Wood, Kingwood Oil Co.; C. J. Wrightsman, Wrightsman Oil Co.

MONTANA ASSOCIATION

The second annual convention of the Montana chapter of the Rocky Mountain Oil and Gas Association will be held at Hotel Rainbow, in Great Falls, December 1-3, is was decided at a meeting in Great Falls.

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	Oct. 12		Oct. 5		Sept. 28	
OKLAHOMA (Group 3)—						
50 52 450 end point (Naphtha)	.09¾		.09¾	.10	.10	.10¼
56-58 450 end point	.09½	.09¾	.09¾		.10	.10¼
58-60 450 end point	.09¾		.09¾	.10	.10⅛	.10¼
58 60 437 end point (U. S. Motor)	.09¾	.10	.10	.10¼	.10¼	.10½
60-62 400 end point	.10½		.10½	.10¾	.10¾	.11
64-66 375 end point	.10¾	.11	.10⅞	.11	.11	.11¼
68-70 360 end point	.11⅝	.11¾	.11¾	.12	.11¾	.12
KANSAS—						
58-60 437 end point (U. S. Motor)	.10	.10¼	.10½	.10¾	.10¾	.10⅞
NORTH TEXAS—						
48-50 450 end point (Naphtha)	.09⅝	.09¾	.09¾	.10	.10	
50 52 450 end point (Naphtha)	.09¾		.09¾	.10	.10	.10⅛
56-58 450 end point	.09½	.09⅝	.09¾		.10	.10⅛
58-60 437 end point (U. S. Motor)	.09¾	.10	.10	.10¼	.10¼	.10⅜
60-62 400 end point	.10¼	.10½	.10⅜	.10½	.10⅝	.10¾
64-66 390 end point	.10½	.10⅝	.10½	.10⅞	.10¾	.10⅞
64-66 375 end point	.10⅝	.10⅞	.10⅝	.10⅞	.10⅞	.11⅛
68-70 360 end point	.11½	.11¾	.11¾		.11¾	
NORTH LOUISIANA—						
58-60 437 end point (U. S. Motor)	.10⅛	.10⅜	.10¼	.10⅜	.10¼	.10⅜
ARKANSAS—						
58-60 437 end point (U. S. Motor)	.10⅛	.10⅜	.10¼	.10⅜	.10¼	.10½
ROCKY MOUNTAIN STATES—						
*58 60 437 end point (U. S. Motor)	.12⅞	.13	.13	.13¼	.13¼	.13½
PENNSYLVANIA—						
52 Naphtha	.12	.12¼	.12¼	.12½	.12½	.12⅝
54 Naphtha	.12	.12¼	.12½	.12⅝	.12⅝	.12⅞
56 Gasoline	.12¼	.12½	.12½	.12¾	.12¾	.13
58 Gasoline	.12½	.12⅝	.12¾	.13	.13	.13¼
60 Gasoline	.13	.13¼	.13¼	.13½	.13¼	.13½
62 Gasoline	.14	.14¼	.14	.14¼	.14	.14¼
64 Gasoline	.14¼	.14½	.14½	.14⅝	.14½	.14⅝
66 Gasoline	.15½	.15⅝	.15½	.15⅝	.15½	.15⅝
68-70 Gasoline	.17⅝	.17¾	.17⅝	.17¾	.17⅝	.17¾
CALIFORNIA—						
54-58 437 end point (U. S. Motor) domestic	.10	.10½	.10	.10½	.12	.12½
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 end point (Naphtha)	.09¾		.10		.10¼	.10½
56-58 450 end point	.09⅝	.09¾	.09¾	.10	.10¼	
58-60 437 end point (U. S. Motor)	.09¾	.10¼	.10½	.10¼	.10⅜	.10½
60-62 400 end point	.10½	.10⅝	.10⅜	.10⅞	.11	.11¼
64-66 375 end point	.11	.11¼	.11⅛	.11⅜	.11½	.11¾
68 70 360 end point	.11¾		.11⅞	.12	.12	

*Colorado points.

NATURAL GASOLINE

	Oct. 12		Oct. 5		Sept. 28	
OKLAHOMA (Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.09¼	.09⅜	.09½		.09⅝	.09¾
Grade A, 72-79.9, 375 e.p., rec. 90%	.09¼	.09⅜	.09½		.09⅝	.09¾
Grade BB, 84-92, 375 e.p., rec. 85%	.08⅞	.09	.09	.09¼	.09⅜	.09½
Grade B, 76-83.9, 375 e.p., rec. 85%	.08⅞	.09	.09	.09¼	.09⅜	.09½
Grade C, 80-90, 375 e.p., rec. 78%	.08⅝	.08¾	.09		.09¼	
NORTH TEXAS—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.09¼		.09½		.09¾	
Grade A, 72 79.9, 375 e.p., rec. 90%	.09¼		.09½		.09¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.08¾	.09	.09	.09¼	.09⅜	.09½
Grade B, 76-83.9, 375 e.p., rec. 85%	.08⅞	.09	.09	.09¼	.09⅜	.09½
Grade C, 80-90, 375 e.p., rec. 78%	.08½	.08¾	.09		.09¼	
NORTH LOUISIANA—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.09¾	.10	.10¼	.10⅜	.10½	.10⅝
Grade B, 76 83.9, 375 e.p., rec. 85%	.09¾	.09⅞	.10⅛	.10¼	.10⅜	.10½
Grade C, 80-90, 375 e.p., rec. 78%	.09½	.09¾	.10	.10¼	.10¼	.10½
CALIFORNIA—						
75-85, 375-390 end point	.11½	.12	.11½	.12	.15½	.16
CHICAGO DISTRICT (Based on Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.09¼	.09½	.09¾		.09¾	.10
Grade A, 72-79 9, 375 e.p., rec. 90%	.09¼	.09½	.09¾		.09¾	.10
Grade BB, 84-92, 375 e.p., rec. 85%	.09	.09¼	.09¼	.09¾	.09½	.09¾
Grade B, 76-83 9, 375 e.p., rec. 85%	.09	.09¼	.09¼	.09¾	.09½	.09¾
Grade C, 80-90, 375 e.p., rec. 78%	.08¾	.09	.09	.09¼	.09¼	.09½

MOTOR NATURAL GASOLINE

	Oct. 12		Oct. 5		Sept. 28	
OKLAHOMA (Group 3)—						
60-62 450 end point	.09½	.09¾	.09¾	.10	.10	
64-66 437 end point	.09¾		.10		.10⅛	.10¼
NORTH TEXAS—						
64-66 437 end point	.09⅝	.09⅞	.09¾	.10	.10⅛	.10¼
PENNSYLVANIA—						
*60-62	.12¼	.12½	.12¼	.12½	.13	.13¼
*64-66	.12½	.12¾	.12½	.12¾	.13¼	.13½
*66-68	.12¾	.13	.12¾	.13	.13½	.13¾
*68-70	.12¾	.13	.12¾	.13	.13½	.13¾
CHICAGO DISTRICT (Based on Group 3)—						
60-62 450 end point	.09¾	.10	.10		.10	
64 66 437 end point	.10	.10¼	.10¼		.10¼	

*At Sistersville, W. Va.

BURNING OIL

	Oct. 12		Oct. 5		Sept. 28	
KANSAS—						
41-43 water white Kerosene	.07½	.08	.08	.08½	.08½	.08¾
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.07	.07¼	.07¼	.07½	.07¾	.08¼
42-44 water white Kerosene	.07⅝	.07¾	.07¾	.08	.08⅜	.08½
NORTH LOUISIANA—						
41-43 prime white Kerosene	.08	.08¼	.08¼	.08½	.09	.09¼
ROCKY MOUNTAIN STATES—						
*40-41 water white Kerosene	.10	.10¼	.10¼	.10½	.10¾	.11
NORTH TEXAS—						
41-43 water white Kerosene	.06⅞	.07	.07⅛	.07¼	.07¾	.08
ARKANSAS—						
41-43 water white Kerosene	.08	.08¼	.08¼	.08½	.09	.09¼
PENNSYLVANIA—						
43 Kerosene prime white	.09¼	.09½	.09¾	.10	.09¾	.10
45 Kerosene water white	.09½	.09¾	.09¾	.10	.10	.10¼
46 Kerosene water white	.10	.10¼	.10¼	.10½	.10¼	.10⅜
47 Kerosene water white	.10½	.10⅝	.10⅜	.11	.10⅜	.11
34 Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
34 Sundebloom Neutral	.08½	.08⅜	.08½	.08⅜	.08½	.08⅜
36 Miners' Neutral	.07¼	.07½	.07¼	.07½	.07¼	.07½
300 Mineral Seal	.08½	.08⅝	.08½	.08⅝	.08¾	.08⅞
CALIFORNIA—						
38-40 water white (high burning test)	.07½	.08	.07½	.08	.07½	.08
Engine distillate, 43 45 445 end point	.07¾	.08	.07¾	.08	.09¾	.10
Engine distillate, 42-44 480 end point	.07¼	.07½	.07¼	.07½	.09¼	.09½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.07	.07½	.07¼	.07⅜	.08	.08¼
42-44 water white Kerosene	.07¾	.08	.07⅞	.08	.08½	

*Colorado points.

FUEL OILS

	Oct. 12		Oct. 5		Sept. 28	
KANSAS—						
24-26 Fuel Oil	1.50		1.50		1.50	
32-36 Gas Oil	.04⅝	.04¾	.04⅝	.04¾	.04⅝	.04¾
38-40 Distillate	.05⅞	.06	.05⅞	.06	.05⅞	.06
OKLAHOMA (Group 3)—						
Below 22 Fuel Oil (sellers' cars)	1.25	1.27½	1.25	1.30	1.27½	1.30
22-26 Fuel Oil (sellers' cars)	1.30	1.32½	1.30	1.35	1.32½	1.35
24-26 Fuel Oil (sellers' cars)	1.35	1.40	1.35	1.40	1.37½	1.40
26-30 Fuel Oil (sellers' cars)	1.42½	1.45	1.45	1.47½	1.45	1.50
28-30 Fuel Oil (sellers' cars)	1.50	1.55	1.52½	1.55	1.55	1.60
32-36 Gas Oil (dark)	.04⅛	.04¼	.04⅛	.04⅜	.04⅛	.04⅜
32 36 Gas Oil (cracking stock)	.04¼	.04⅜	.04¼	.04⅜	.04¼	.04⅜
36-38 Distillate	.05⅜	.05½	.05⅜	.05½	.05⅜	.05⅝
38-40 Straw Distillate	.05⅝	.05⅞	.05⅝	.05⅞	.05⅝	.05⅞
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	1.45		1.45		1.45	
32-36 Gas Oil (straw)	.04	.04⅛	.04	.04⅛	.04	.04⅛
38 40 Straw Distillate	.05⅜	.05⅝	.05⅜	.05⅝	.05⅜	.05⅝
NORTH LOUISIANA—						
18-20 Fuel Oil	1.27½	1.30	1.27½	1.30	1.27½	1.30
32-36 Gas Oil (straw)	.04⅛	.04⅜	.04⅛	.04⅜	.04¼	.04⅜
32-36 Gas Oil (dark)	.04	.04¼	.04	.04¼	.04	.04⅛
36-38 Distillate	.05	.05¼	.05	.05¼	.05	.05¼
ARKANSAS—						
38-40 Distillate	.05½	.05¾	.05½	.05¾	.05½	.05¾
32-36 Gas Oil (straw)	.04¼		.04¼		.04¼	.04½
16-20 Refinery Fuel Oil	1.25		1.25		1.25	
GULF COAST (South Texas)—						
Gas Oil	.05½	.05⅝	.05½	.05⅝	.05½	.05⅝
Fuel Oil	1.75	1.85	1.75	1.85	1.75	1.85
PENNSYLVANIA—						
30-34 Fuel Oil	.05¾	.06	.05¾	.06	.06	.06¼
36 40 Fuel Oil	.06½	.06¾	.06½	.06¾	.06½	.06¾
CALIFORNIA—						
33-36 Distillate	.04	.04¾	.04	.04¾	.04	.04¾
27-32 Distillate	.03½	.04	.03¾	.04	.03¾	.04
15-20 Fuel Oil, Bunkers (at tide water)	.92½	1.04	.92½	1.04	1.00	1.04
15-20 Fuel Oil, cargo lots (tidewater)	.82½	.87½	.82½	.87½		
27 plus Diesel	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars) Group 3	1.35	1.40	1.40	1.45	1.40	1.45
22-26 Fuel Oil (sellers' cars) Group 3	1.30	1.35	1.35	1.40	1.35	1.40
18-22 (Group 3)	1.25	1.30	1.27½	1.32½	1.30	1.35
18-20 (Smackover)	1.25	1.30	1.27½	1.30	1.27½	1.32½
32 36 Gas Oil	.04⅛	.04¼	.04⅛	.04¼	.04⅛	.04¼
36-38 Distillate	.05⅜	.05⅝	.05¼	.05½	.05½	.05⅝
83-40 Straw Distillate	.05¾	.06	.05¾	.06	.05¾	.06

LUBRICATING OILS AND WAX

	Oct. 12		Oct. 5		Sept. 28	
OKLAHOMA (Group 3)—						
70-80 vis., 2½ color, 20-25 cold test	.06	.07	.06	.07	.06	.07
100 vis., 2 color, 20-25 cold test	.07	.07½	.07	.07½	.07	.07½
100 vis., 3 color, 20-25 cold test	.06½	.07	.06½	.07	.06½	.07
150 vis., 3 color, 20-25 cold test	.09½	.10	.09½	.10	.09½	.10
150 vis., 4 color, 20-25 cold test	.09¾		.09¾		.09¾	
180 vis., 3 color, 23 28 cold test	.10½	.11½	.10½	.11½	.10½	.11½
180 vis., 4 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
200 vis., 3 color, 23-28 cold test	.10¾	.12¼	.10¾	.12¼	.10¾	.12¾
200 vis., 4 color, 23-28 cold test	.11¼	.11½	.11¼	.11½	.11¼	.11½
220 vis., 3 color, 25-30 cold test	.13	.13½	.13	.13½	.13	.13½
220 vis., 3 color, 25-30 cold test	.13		.13		.13	
240 vis., 3 color, 25-30 cold test	.14	.15	.14	.15	.14	.15
240 vis., 4 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
280 vis., 3 color, 25-30 cold test	.16	.17	.16	.17	.16	.17
280 vis., 4 color, 25 30 cold test	.15½	.16½	.15½	.16½	.15	.16½
180 vis , 5 color, 23-28 cold test	.09¾	.10¼	.09¾	.10¼	.09¾	.10¼
200 vis., 5 color, 23-28 cold test	.10	.11¼	.10	.11¼	.10	.11¼
220 vis., 5 color, 25-30 cold test	.12	.12¼	.12	.12¼	.12	.12¾
240 vis., 5 color, 25-30 cold test	.13	.14	.13	.14	.13	.14
280 vis., 5 color, 25-30 cold test	.15	.16	.15	.16	.15	.16
Cylinder Stocks:						
600, steam refined, dark green	.08	.11	.08	.11	.08	.11
600, steam refined, light green	.06	.07	.06	.07	.06	.07
190-200 vis. @ 210 Bright Stock	.33	.35	.33	.35	.33	.35
150-160 vis. @ 210 Bright Stock	.28	.31	.28	.31	.28	.31
Waxes:						
124 126 White Crude Scale Wax	.04¾		.04¾		.04¾	
PENNSYLVANIA—						
150, 3 color	.23		.23		.23¼	
180, 3 color	.26½		.26½		.26½	
200, 3 color	.28¾		.28½		.30	
220, 3 color	.31		.31		.31	
600, steam refined	.12¼		.12¼		.12¼	
635, steam refined	.15½		.15½		.15½	
650, steam refined	.16¾		.17		.17	
600, Pennsylvania flash	.21		.21		.21	
630, Pennsylvania flash	.32½		.32½		.32½	
*550, E filtered	.19		.19		.19	
600, E filtered	.21½		.21½		.21½	
*600, E filtered	.21½		.21½		.21½	
600, D filtered	.27		.27		.27	

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

550. E filtered	.18		.18		.18	
550. D filtered	.22		.22		.22	
Pennsylvania Bright Stock	.41½		.41½		.41½	
122-124 White Crude Scale Wax	.05⅛	.05¼	.05⅛	.05¼	.05⅛	.05¼
†124-126 White Crude Scale Wax	.05¼	.05½	.05¼	.05½	.05¼	.05½

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.06	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.08½	.09	.08½	.09	.08½	.09
No. 3 color, 200 vis., pale oil	.11	.12	.11	.12	.11	.12
No. 3½ color, 300 vis., pale oil	.12	.13	.12	.13	.12	.13
No. 3¾ color, 500 vis., pale oil	.14	.15	.14	.15	.14	.15
No. 4 color, 750 vis., pale oil	.17	.18	.17	.18	.17	.18
No. 2 plus color, 200 vis., pale filtered	.21½		.21½		.21½	
No. 2 color, 300 vis., pale filtered	.24½		.24½		.24½	
No. 2½ color, 500 vis., pale filtered	.27½		.27½		.27½	
No. 2½ color, 750 vis., pale filtered	.35½		.35½		.35½	
No. 5 to 6 color, 200 vis., red oil	.10	.10½	.10	.10½	.10	.10½
No. 5 to 6 color, 300 vis., red oil	.11½	.12	.11½	.12	.11½	.12
No. 5 to 6 color, 500 vis., red oil	.12½	.13	.12½	.13	.12½	.13
No. 5 to 6 color, 750 vis., red oil	.16	.17	.16	.17	.16½	.17
CALIFORNIA—						
150 vis., 2½-3 color	.10	.11½	.10	.11½	.10	.11½
200 vis., 2½-3 color	.13½	.14½	.13½	.14½	.13½	.14½
300 vis., 3 -3½ color	.15	.16	.15	.16	.15	.16
350 vis., 3½-4 color	.15½	.17½	.15½	.17½	.15½	.17½
400 vis., 3½-4 color	.18	.19	.18	.19	.18	.19
Red Neutrals:						
200 vis., 3½-5 color	.12	.13	.12	.13	.12	.13
300 vis., 5 -6 color	.13	.14	.13	.14	.13	.14
400 vis., 5 -6 color	.15	.16	.15	.16	.15	.16
500 vis., 4½-5 color	.18	.19½	.18	.19	.18	.19
500 vis., 6 -6½ color	.16	.17	.16	.17	.16	.17
600 vis., 6½ plus color	.17	.18½	.17	.18	.17	.18

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

Gasoline:	Oct. 12	Oct. 5	Sept. 28
U. S. Motor, 58-60 437	.13	.13	.13
Export, 64-66 375	.14	.14½	.15
Kerosene, prime white, 41-43	.10½	.10½	.10⅞
*Bunker Oil "C" 14-16, per bbl.	1.65	1.65	1.75
*Diesel Oil, 28-30, per bbl.	2.50	2.50	2.50
Gas Oil, 28 plus	.06¾	.06¾	.06¾
Furnace Oil (tankwagon)	.12	.12	.12
Cylinder Oil, light filtered, 600 s.r.	.29	.29	.29
Bright Stock, No. 5, 150 vis., at 212 F.	.42	.42	.42
White Neutral, No. 1, 170 vis., 1 color	.37	.37	.37
Spindle Oil, No. 1 red, 230 vis., 5½ color	.17½	.17½	.17½
Pale Oil, "25," 170 vis., 3½ color	.13	.13	.13
Pale Oil, "28," 100 vis., 2 color	.08	.08	.08
Red Oil:			
No. 3, 160 vis., 7 color	.11	.11	.11
No. 2, 212 vis., 5½ color	.12	.12	.12
No. 1, 265 vis., 5½ color	.13½	.13½	.13½
Polar, 295 vis., 6 color	.14	.14	.14
Paraffin Wax, refined:			
120-122 a.m.p., per lb.	.05¾	.05⅞	.05⅞
125-127 a.m.p., per lb.	.06	.06	.06
130-132 a.m.p., per lb.	.06½	.06½	.06½
135-137 a.m.p., per lb.	.06¾	.06¾	.06¾
Petrolatum, in bbls., per lb.:			
Dark green	.02	.02	.02
Amber	.03¼	.03¼	.03¼
Cream	.05¾	.05¾	.05¾
Lily white	.07¾	.07⅞	.07⅞
Snow white	.08¾	.08¾	.08¾

*Lighterage 5.5c a barrel extra.

NEW YORK CASE EXPORT PRICES

	Oct. 12	Oct. 5	Sept. 28
Gasoline, U. S. Motor, 58-60	.27.90	.27.90	.28.40
Kerosene:			
Standard white Kerosene	.19.15	.19.15	.19.65
Water white Kerosene	.20.65	.20.65	.21.15

LOS ANGELES EXPORT PRICES

	Oct. 12		Oct. 5		Sept. 28	
Kerosene water white	.05½	.06½	.05½	.06½	.05½	.06½
U. S. Motor Gasoline, 54-56 437 e.p.	.08¾	.09¼	.10	.10½	.10	.10½

CRUDE OIL PRICES

OKLAHOMA, KANSAS AND NORTH TEXAS

***Prairie Oil & Gas Co.**
(Oklahoma, Kansas and North and East Central Texas)
(Effective May 15)

28° to 28.9°	$1.65
29° to 29.9°	1.73
30° to 30.9°	1.81
31° to 31.9°	1.89
32° to 32.9°	1.97
33° to 33.9°	2.05
34° to 34.9°	2.13
35° to 35.9°	2.21
36° to 36.9°	2.29
37° to 37.9°	2.37
38° to 38.9°	2.45
39° to 39.9°	2.53
40° to 40.9°	2.61
41° to 41.9°	2.69
42° to 42.9°	2.77
43° to 43.9°	2.85
44° to 44.9°	2.93
45° to 45.9°	3.01
46° to 46.9°	3.09
47° to 47.9°	3.17
48° to 48.9°	3.25
49° to 49.9°	3.33
50° to 50.9°	3.41
51° to 51.9°	3.49
52° and above	3.57

*Other major purchasers except as noted below.

Humble Oil & Refining Co.
(Effective May 15)
(North and East Central Texas, Ranger, Mexia, Powell, Richland, Wortham, Currie, Moran, Big Lake, Nacona and Lytton Springs)

Same prices as Prairie Oil & Gas Co. schedule. Postings below 28° gravity 8 cents less for each degree, effective June 21.

Magnolia Petroleum Co.
(Effective May 15)
(Oklahoma, Kansas and North and East Central Texas, except Corsicana heavy, and Lytton Springs of South Central Texas)

Below 28°	$1.30
Other grades same as Prairie Oil & Gas Co.	
Iatan	$1.15
Corsicana heavy	1.25
Panola County:	
30° to 34.9°	$1.95
35° to 37.9°	2.10
38° and above	2.25

TEXAS PANHANDLE
Humble Oil & Refining Co.
(Effective Sept. 22)

Carson-Hutchinson Counties	$1.25
Other Fields—	
(Effective June 21)	
39° to 39.9°	$1.90
40° to 40.9°	1.95
41° to 41.9°	2.00
42° to 42.9°	2.05
43° to 43.9°	2.10
44° and above	2.15

Grades above 39° gravity same as posted by the Kay County Gas Co.

Kay County Gas Co.
Magnolia Petroleum Co.

All Fields	$1.25

Note: Magnolia Petroleum Co. prices effective September 22, and Kay County Gas Co., October 4.

WEST TEXAS
Crane-Upton Counties (Sept. 15)

Below 26°	$ .80
26° to 26.9°	.85
27° to 27.9°	.90
28° to 28.9°	.95
29° to 29.9°	1.00
30° to 30.9°	1.05
31° to 31.9°	1.10
32° to 32.9°	1.15
33° to 33.9°	1.20
34° to 34.9°	1.25
35° to 35.9°	1.30
36° and above	1.35

GULF COAST
***Humble Oil & Refining Co.**
(Effective August 30)

Grade A	$1.40
Grade B—	
Below 25°	1.40
25° to 25.9°	1.45
26° to 26.9°	1.50
27° to 27.9°	1.55
28° to 28.9°	1.60
29° to 29.9°	1.65
30° to 30.9°	1.70
31° to 31.9°	1.75
32° to 32.9°	1.80
33° to 33.9°	1.85
34° to 34.9°	1.90
35° and above	1.95
Spindletop	
Grade A	$1.25
Grade B—	
Below 25°	1.25
25° to 25.9°	1.30
26° to 26.9°	1.35
27° to 27.9°	1.40
28° to 28.9°	1.45
29° to 29.9°	1.50
30° to 30.9°	1.55
31° to 31.9°	1.60

*All major purchasers except as noted below. Sun Pipe Line Co. prices effective September 1.

The Texas Company
(Effective August 30)

Grade A	$1.40
Grade B	1.40
†Light Crude—	
35° to 35.9°	1.95
36° to 36.9°	2.00
37° to 37.9°	2.05
38° to 38.9°	2.10
39° to 39.9°	2.15
40° and above	2.20

†The Texas Company's postings on light crude under 35° gravity are same as Humble Oil & Refining Co.'s grades and prices for Grade B crude. Spindletop prices same as for Humble Oil & Refining Co., but classified according to The Texas Company's general schedule to 31° to 31.9° crude.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS
***Magnolia Petroleum Co.**

Luling (contract) (Eff. May 18)	$1.30
Mirando (Webb, Jim Hogg and Zapata Counties) (May 15)	1.25
Rockdale-Minerva (Milam County)	1.25
Thrall	1.00
Callihan (Live Oak and McMullen Counties) (May 15)	1.75
†Lockhart (Lytton Springs)	
Somerset (Grayburg Pipe Line Co.):	
(Effective May 17)	
28° to 28.9°	$1.25
29° to 29.9°	1.35
30° to 30.9°	1.71
31° to 31.9°	1.89
32° to 32.9°	1.97
33° to 33.9°	2.05
34° to 34.9°	2.13
35° to 35.9°	2.20
36° to 36.9°	2.29
37° to 37.9°	2.37
38° and above	2.45

*Texpata Pipe Line Co. and Humble Pipe Line Co. also post in Mirando Field.
†Lockhart prices same as for North and East Central Texas. Lockhart posted by Magnolia Petroleum Co. and Humble Oil & Refining Co.

ARKANSAS AND NORTH LOUISIANA
Standard Oil Co. of Louisiana
(Effective May 18)

Caddo:	
Below 26° (July 24)	$1.40
26° to 28.9° (July 24)	1.55
29° to 31.9° (July 24)	1.70
32° to 34.9°	2.25
35° to 37.9°	2.35
38° and above	2.45
Homer below 31°	1.85
31° to 32.9°	2.00
33° to 34.9°	2.10
35° to 36.9°	2.20
37° and above	2.30
Bull Bayou, 32° to 34.9°	1.95
35° to 37.9°	2.10
38° and above	2.25
Cotton Valley	1.20
DeSoto	2.30
Crichton	2.10
Bellevue	1.40
Smackover, below 24°	1.10
24° to 24.9°	1.35
25° to 25.9°	1.40
26° to 26.9°	1.45
27° and above	1.50
*Stephens, Ark., below 26°	1.45
26° and above	1.65
†Calion (East El Dorado)	1.10
‡Urania (August 26)	1.10

Other companies posting in these fields are: Gulf Pipe Line Co.; Atlantic Oil Producing Co. in Homer, Haynesville, El Dorado and Smackover. The Texas Company in Caddo, Bull Bayou, DeSoto, Crichton and Smackover.

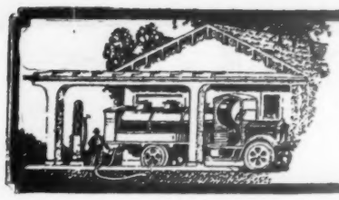
*Posted by the Atlantic Oil Producing Co. †Posted by the Gulf Pipe Line Co. ‡Posted by the Louisiana Oil Refining Corp.

ROCKY MOUNTAIN STATES
Ohio Oil Co.—Midwest Refining Co.
(Effective May 17)

Rock Creek (Wyo.)	$2.25
Salt Creek—	
29° to 29.9°	1.73
30° to 30.9°	1.81
31° to 31.9°	1.89
32° to 32.9°	1.97
33° to 33.9°	2.05
34° to 34.9°	2.13
35° to 35.9°	2.21
36° to 36.9°	2.29
37° and above	2.37
Big Muddy	2.25
Mule Creek	1.75
Grass Creek, light	2.40
Grass Creek, heavy	.90
Elk Basin	2.40
Lance Creek	2.40
Rex Lake	1.45
Osage	2.40
Lost Soldier (Contract)	1.35
Greybull-Torchlight	2.15
Hamilton Dome	1.35
Cat Creek (Mont.)	2.40
Sunburst (Mont.) (Oct. 5)	1.35
Florence (Colo.)	1.60
Artesia	1.95
Hogback (N. Mex.)	2.45

Note: Salt Creek, Osage, Cat Creek,

(Continued on Page 146)



TANK WAGON MARKETS

Tankwagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, Oct. 12.

ALL TANKWAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)
Main Service Station Price

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wagon
Chicago Dist.—				
†Less than 100 gals.	19.0	21.0	...	14.5
Tankwagon prices on April 19, 1922: g. up 1½c; May 8, up 1c; June 27, g. and k. up 1c; July 19, g. down 2c; k. down 1c; Oct. 10, g. down 2c; Oct. 21, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.4c; Oct. 4, k. down 1½c; Nov. 16, g. down 1.4c; Dec. 20, g. up 2c; Jan. 12, 1924, g. up 2c, k. up 1c; Feb. 5, g. up 2c, k. 1c; July 18, g. down 1c; July 30, g. and k. down 1c; Sept. 12, g. down 2c; Jan. 23, 1925, g. up 1c; Jan. 26, g. up 1c; Jan. 31, g. up 1c; Feb. 12, g. up 2c, k. up 1c; April 19, g. down 1c; July 14, g. up 1c; Aug. 25, g. down 2c, k. down 1c; Sept. 1, g. down 1c; Feb. 4, 1926, g. up 1c, k. up 1c; April 16, k. up 1c; April 24, k. up ½c; April 29, g. up 1c, k. up ½c; May 6, k. up ½c; May 17, g. and k. up 1c; July 1, k. down 1c; July 3, k. down 1c; Aug. 13, k. up 1c; Aug. 24, k. up 1c; Oct. 13, k. down 1c.				
Decatur, Ill.	19.2	21.2	...	15.0
E. St. Louis	18.1	20.35	...	14.1
Joliet	19.4	21.4	...	15.2
Peoria	19.2	21.2	...	15.0
Quincy	19.2	21.2	...	14.8
Davenport, Ia.	21.5	23.5	2.0	15.4
Des Moines	21.5	23.5	2.0	15.4
Keokuk	21.5	23.5	2.0	15.4
Sioux City	18.9	20.9	2.0	15.0
Duluth, Minn.	22.5	24.5	2.0	16.1
Minneapolis	22.2	24.2	2.0	16.1
La Cross, Wis.	22.2	24.2	2.0	15.9
Milwaukee	21.1	23.1	2.0	14.8
Madison	21.3	23.3	2.0	15.0
Detroit, Mich.	21.8	23.8	2.0	15.7
Grand Rapids	21.7	23.7	2.0	15.6
Saginaw	21.9	23.9	2.0	15.8
Evansville, Ind.	22.0	24.0	3.0	15.0
Ft. Wayne	22.4	24.4	3.0	15.4
Indianapolis	22.3	24.3	3.0	15.2
South Bend	22.4	24.4	3.0	15.4
Fargo, N. D.	23.9	25.9	2.0	18.1
Huron, S. D.	23.5	25.5	3.0	16.6
Sioux Falls	22.0	24.0	3.0	16.1
*K. C., Mo.	21.9	23.9	3.0	13.8
*Springfield	21.8	23.8	3.0	14.7
*St. Louis	20.6	22.9	2.5	14.5
*St. Joseph	21.0	23.0	2.5	14.4
‡Wichita, Kan.	19.8	21.8	2.0	14.3
Bartlesville, Ok.	20.8	22.8	3.0	14.3

NAPHTHAS

	Tank wagon	Tank car
Oleum spirits	21.0	15 0
V. M. & P. Naphtha	23 0	16 5
Cleaners naphtha	21 0	17.5

Tankwagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

*State tax is 2c. Remainder is city tax.
†Quantity price on more than 100 gallons, 13.0.
‡At all Kansas points a discount of 1 cent a gallon is allowed from the tankwagon postings on dumps of 50 gallons or more.

The following monthly rebate system is effective on tankwagon schedules throughout the territory of Standard Oil Co. of Indiana: Over 750 gallons, ¼c; over 2,000 gallons, ⅜c; over 3,000 gallons, 1c; over 6,000 gallons, 1¼c; over 10,000 gallons, 2c. If quantity bought during the year is equal to 12 times the monthly agreed purchases the discount will be paid or credited on the entire quantity less monthly paymenta. Service station customers will receive discount of 1 cent a gallon on purchases amounting to 300 gallons a month or 2,400 gallons a year; and 2 cents a gallon on 600 gallons a month or 7,200 gallons a year.

STANOLIND FURNACE OIL
(Standard Oil Co. of Indiana)

Less than 100 gallons	10 0
100 to 399 gallons	9 5
400 or more gallons	9 0

SOUTHWESTERN DISTRICT

***Magnolia Petroleum Co.**

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wagon
Dallas, Tex.	..†17 0	17 0	1 0	15 0
Fort Worth	...†17 0	17 0	1 0	15.0
Houston	.....†21 0	21 0	1.0	15 0
San Antonio	..†19 0	19 0	1.0	15 0
El Paso	.....†21 0	21 0	1 0	16 0
Texarkana	....†21.0	21.0	1.0	15.0
Muskogee, Ok.	20.0	23.0	3.0	15.0
Okla. City	18 0	21 0	3 0	15 0
Tulsa	.....18.0	21.0	3.0	15.0
Little Rock	22.0	25.0	4.0	14.5
Ft. Smith, Ark.	22.0	25.0	4.0	14.5

*The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, ½c; over 2,000 gallons, ⅝c; over 3,000 gallons, 1c; over 4,500 gallons, 1¼c; over 6,000 gallons, 1½c; over 8,000 gallons, 1⅝c; over 10,000 gallons, 2c. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 200 gallons a month, 1c; over 300 gallons a month, 1¼c; over 400 gallons, 1½c; over 500 gallons a month, 1⅝c; over 600 gallons, 2c. The same rule applies for annual purchases as in the tankwagon discounts.

†Magnolia maintains only a retail schedule in Texas with dealers and large consumers allowed a flat 3-cent discount, except at El Paso where the discount is only 2 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wagon
*New Orleans	20 5	23.5	2 0	16 0
Alexanderia	20.0	23 0	3 0	17 0
Baton Rouge	19.0	22 0	3 0	15 5
LaFayette	20.0	23 0	3 0	16 5
Lake Charles	20.5	23 5	3 0	17.5
Shreveport, La.	19 0	22 0	3 0	16 0
Memphis, Tenn.	20 0	23.0	3 0	17 0
Chattanooga	23 5	26.5	3 0	17 5
Knoxville	23 5	26 5	3.0	18 0
Nashville	21.0	24 0	3 0	18 0
Bristol	24 0	27 0	3 0	17 5
Little Rock Ark	22.0	25.0	4.0	16.0

*Tax of 3c includes city tax of 1c.
†Louisiana kerosene prices include 1-cent State tax.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wagon
Atlanta, Ga.	25.0	28 0	3 0	19 0
Augusta	25 0	28 0	3 5	19.0
Macon	25 0	28 0	3 5	19 0
Savannah	23 0	25.0	3.5	17 0
Birm'ghm, Ala.	22 0	25 0	3 0	18 5
Mobile	21 0	24 0	3 0	17.0
Montgomery	23.0	26 0	3 0	19 5
Clarksdale, Miss	23 0	26 0	4 0	15 5
Jackson	23 0	26.0	4.0	16 5
Natches	22 5	25 5	4 0	16 0
Vicksburg	22.5	25 5	4 0	16 0
Jack'ville, Fla.	23 0	26 0	4.0	17 0
Miami	25 0	28 0	4 0	18 5
Pensacola	23.0	26.0	4 0	17 5
Tampa	23 0	26 0	4 0	17 0
Covington	24.0	27 0	5 0	18.0
Louisville	22.0	25.0	5.0	17.0
Lexington, Ky.	23.0	26.0	5.0	18.0

In addition to the state tax of 2c on gasoline, Montgomery has city tax of 1c on gasoline and ½c on kerosene. Prices in Georgia include ½c inspection fee on gasoline and kerosene; in Florida, an inspection fee of 0.125c; in Alabama, an inspection fee of ½c on kerosene only.

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wagon
All Ohio points	22.0	24.0	2.0	17.0

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wagon
Denver, Colo.	22 0	22 0	2 0	18 0
Pueblo	22 0	24.0	2 0	18 0
Grand Jct.	26 0	28 0	2 0	22 0
Casper, Wyo.	22.5	24 5	2 5	16 5
Cheyenne	23 5	25 5	2 5	18.0
Butte, Mont.	24 0	24 0	2.0	20 5
Helena	26 0	28 0	2 0	20.5
Salt Lake, Utah	24.0	26.0	3.5	19.0
Boise, Idaho	25.0	27.0	3.0	21.0
Albuquerque, N. Mex.	28 5	28 5	3.0	20.0

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wagon
Atlantic City	19 0	....	...	16 0
Newark, N. J.	19 0	21 0	....	16.0
Annapolis, Md.	21 0	....	2 0	16 0
Baltimore	21 0	24 0	2 0	16.0
Cumberland	21 0	24 0	2 0	16 0
Washington	21 0	24 0	2.0	16 0
Danville, Va.	23 5	....	4 5	16 0
Norfolk	23 5	26 5	4.5	16 0
Petersburg	23 5	26 5	4 5	16 0
Roanoke	23 5	26 5	4.5	16 0
Richmond	23 5	26 5	4 5	16 0
Charleston, W. Va.	21 5	24 5	3 5	16.0
Keyser	22 5	....	3 5	16 0
Parkersburg	21 5	24 5	3 5	16 0
Wheeling	21.5	24 5	3 5	16 0
Charlotte, N. C.	23 5	26 5	4 0	16.0
Hickory	23 5	....	4 0	16 0
Mt. Airy	23 5	26 5	4 0	16 0
Salisbury	23 5	26 5	4 0	16 0
Charleston, S.C.	24 5	27 5	5.0	16.0
Columbia	24 5	27 5	5.0	16.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wagon
Albany, N. Y.	17 0	....	...	18 0
*New York	21 0	....	...	18.0
Buffalo	20 0	....	...	18.0
Rochester	20 0	....	...	16 0
Syracuse	17.0	....	...	18.0
Boston, Mass.	19.0	....	...	18.0
Augusta, Me.	24 0	....	3.0	18.0
Manchester, N. H.	23 0	....	2.0	18.0
Burlington, Vt.	23 0	....	2.0	18.0

*Price in steel barrels.
Note: Standard Oil Co. of New York does not generally quote service station price in its territory. In most cases the service station price is 2 to 3 cents higher than tankwagon price.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wagon
Omaha	21.25	23.25	2.0	15.0
McCook	22.75	24.75	2.0	16.5
Norfolk	21.75	23.75	2.0	16.5
N. Platte	22.75	24.75	2.0	16.25
Scottsbluff	23.25	24.25	2.0	15.75

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wagon
San Francisco	15.0	18.0	2.0	13.5
Los Angeles	13.5	16.5	2.0	16.5
Fresno	15.5	18.5	2.0	17.5
Reno, Nev.	20.5	23.5	4.0	19.5
Portland, Ore.	16.0	19.0	3.0	16.5
Seattle, Wash.	15.0	18.0	2.0	16.5
Spokane	19.0	22.0	3.0	20.5
Tacoma	15.0	18.0	2.0	16.5
Phoenix, Ariz.	22.0	25.0	3.0	21.5

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wagon
*Pittsburgh, Pa.	19.0	24.0	...	17.5
*Philadelphia	19.0	24.0	...	17.5
*Scranton	19.0	24.0	...	17.5
*Allentown	19.0	24.0	...	17.5
Altoona	19.0	22.0	...	17.5
*Erie	17.0	22.0	...	15.5
Dover, Del.	21.0	24.0	2.0	18.5
Wilmington	21.0	24.0	2.0	15.5
Spring'd, Mass.	19.0	21.0	...	15.5
Worcester	19.0	21.0	...	18.5
Boston	19.0	21.0	...	18.5
Providence, R.I.	22 0	24 0	1 0	18.5
Hartford, Conn.	21.0	24.0	2.0	17.5
New Haven	21.0	24.0	2.0	18.5

*Pennsylvania tax of 2c is collected by the dealer and paid by him direct to the State.

CALIFORNIA CRUDE PRICES
Standard Oil Co.-Union Oil Co.
(Effective March 11)

Gravity—	Long Beach Huntington Beach Richfield Brea-Olinda Rosecrans-Dom'gues Torrance-Inglewood	Whittier La Habra Montebello	Kern River Newhall-McKittrick Midway-Sunset Elk Hills Lost Hills Belridge	Coyote	Santa Fe Springs	Coalinga	Wheeler Ridge	Santa Maria Ventura Salt Lake
14°	.85	.85	.75	.85	....	.75	.75	.85
15°	.87	.85	.75	.85	....	.75	.75	.85
16°	.90	.85	.75	.85	....	.75	.75	.87
17°	.94	.85	.75	.85	....	.75	.75	.85
18°	.98	.86	.75	.86	....	.75	.75	.85
19°	1 04	.87	.75	.87	....	.75	.75	.85
20°	1 10	.89	.82	.90	.89	.79	.78	.90
21°	1 16	.91	.90	.98	.91	.86	.81	.97
22°	1 22	.94	1.00	1 06	.94	.93	.85	1 04
23°	1.28	.97	1 11	1 14	.97	1 00	.89	1 11
24°	1 34	1 01	1 22	1 22	1 02	1 07	.93	1.18
25°	1 40	1.05	1 33	1 30	1 08	1.14	.97	1.25
26°	1 46	1 09	1 44	1.38	1 16	1 21	1 01	1.32
27°	1 52	1 13	1.55	1 46	1.24	1 28	1.05	1.39
28°	1 58	1 17	1 66	1 54	1.32	1 35	....	1.46
29°	1 64	1.21	1 77	1 62	1.40	1 42	....	1.53
30°	1 70	1 25	1 88	1 70	1 48	1 49	....	1.60
31°	1 76	....	1 99	....	1 60	1 56	....	1.67
32°	1.84	....	2.10	....	1 72	1.63	....	1.73
33°	1 92	....	2 21	....	1 84	1.70	....	1.79
34°	2 00	....	2 32	....	1 96	1 77	....	1 85
35°	2 08	....	....	....	2.08	1.84	....	1.92
36°	2 16	....	....	....	2 16	....	....	....
37°	2 24	....	....	....	2 24	....	....	....
38°	2 34	....	....	....	2 34	....	....	....
39°	2 44	....	....	....	2.44	....	....	....
40°	2.54	....	....	....	....	....	....	....
41°	2 64	....	....	....	....	....	....	....
42°	2.74	....	....	....	....	....	....	....

*Column 3—Long Beach and Huntington Beach crudes, 14 to 32 degrees, inclusive; Richfield and Brea-Olinda, 14 to 30 degrees; Torrance and Inglewood, 14 to 28 degrees; Dominguez, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.
Column 2—Whittier and La Habra crudes, 14 to 22 degrees; Montebello, 14 to 30 degrees.
Column 4—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset and Elk Hills, 14 to 33 degrees; Lost Hills and Belridge, 14 to 34 degrees.
Column 6—Santa Fe Springs. Only Union Oil Co. posts below 24 degrees.
Column 9—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees; Ventura, 14 to 35 degrees. Posted only by Union Oil Co.

TANKWAGON PRICE CHANGES

September 3—Standard Oil Co. of New York reduced gasoline prices 1 cent at Manchester, N. H. The change was not announced previously.

September 13—Atlantic Refining Co. reduced tankwagon and service station prices of gasoline in Massachusetts and Connecticut 2 cents. Standard Oil Co. of New York reduced gasoline 2 cents at Boston. These changes were not announced previously.

September 29—Standard Oil Co. of Kentucky reduced tankwagon and service station prices of gasoline 2 cents at Lexington, Ky.

October 1—Standard Oil Co. of Kentucky reduced tankwagon and service station prices of gasoline 2 cents at Louisville, Ky. Standard Oil Co. of California reduced tankwagon prices of gasoline 3 cents and service station 4 cents, almost generally in its territory except at Los Angeles where the service station price was cut 1 cent. At Los Angeles tankwagon and service station prices previously had been reduced 3 cents. Standard Oil Co. of New York reduced gasoline 2 cents at Syracuse.

October 2—Continental Oil Co. reduced tankwagon and service station prices of gasoline in Idaho 1½ to 3 cents. The reduction at Boise City was 2 cents. Magnolia Petroleum Co. reduced tankwagon and service station prices of gasoline at Tulsa 2 cents.

October 4—Standard Oil Co. of Louisiana reduced tankwagon and service station prices of gasoline 1 cent at Nashville.

October 5—Magnolia Petroleum Co. advanced kerosene 2 cents at Muskogee. Continental Oil Co. reduced tankwagon and service station prices of gasoline 2 cents in Utah.

October 7—Magnolia Petroleum Co. reduced kerosene 1 cent in Arkansas.

October 12—Atlantic Refining Co. reduced tankwagon and service station prices of gasoline 1 cent in Pennsylvania and Delaware.

October 13—Standard Oil Co. of Indiana reduced kerosene 1 cent. The Standard Oil Co. of Nebraska reduced kerosene 1 cent in Nebraska. These changes are included in the accompanying price tables, which show prices in effect October 12.

LOS ANGELES HARBOR PURCHASE

LOS ANGELES, Cal., Oct. 11.—A ten-acre lease at Los Angeles Harbor, on which is a case oil plant, and dock and warehouse property of the Petroleum Export Corp. have been acquired by the California Petroleum Corp. The California Petroleum Corp., intends to enlarge its export trade in case goods.

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New Financing for Oil Operators

Wildcatting Expected to Brinng in New Production Needed Next Year. Oil Securities Generally Weak During Week

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York City

NEW YORK, Oct. 11.—Oil securities were generally weak during the last few sessions. Atlantic Refining fell to a previous low of 97 compared with the recent price of around 110. Producers & Refiners advanced against trend under heavy buying.

New financing has already been announced by one large oil company and several others are reported to be in the market for funds. In practically every case, financing is for the purpose of expansion of operations made necessary by increased consumption of petroleum.

During the last 12 months the expenditures by leading petroleum companies in wildcatting and development of new production of crude oil in this country and abroad have been extremely large. Look over the weekly drilling reports in The Oil and Gas Journal and you will find several individual companies drilling wells in practically every state in the Union where oil has been found or is believed to exist in commercial quantities. This drlling takes capital.

At the same time, this activity has other significance. It does not indicate the belief that there will be continued overproduction of crude oil from existing oil areas. Quite the opposite. This wildcatting will probably bring the oil which is to supply the new demand for 1927 and later years.

The necessity for financing in some cases reflects, also, the possibility that present oil prices are not adequate to take care of the normal expansion of the industry, a condition which should be righted if the industry is to maintain a good credit position. Wildcatting is as necessary an operation as actual producing, refining or marketing.

Marland Oil

In a letter to stockholders of the Marland Oil Co. outlining the issuance of 20 per cent additional stock to shareholders at $50 a share, for approval of which a special stockholders' meeting has been called for November 1, E. W. Marland, president, states that from January 1, 1924, to September 30, 1926, the company expended $68,450,000 for capital investment and retiring of bonds and bank loans.

He says: "In the judgment of the directors it is proper that the preliminary cost of such work should be financed from earnings, but that periodically, as the results are realized, an opportunity should be given to the stockholders to invest additional capital in the company."

The stock to be issued will be underwritten by bankers and bring in about $19,000,000, making the company's working capital approximately $28,000,000.

Stating that the company's primary business has been production of crude oil and that geological and land departments have been highly developed to this end, Mr. Marland adds that officers believe the additions to proven reserves have justified money expended. "The proven reserves are now estimated to be at least 260,000,000 bbls.," he says, "and the reserves which will probably be developed by further testing of now unproven territory are estimated to be at least 150,000,000 bbls. more. The company at present is producing from these reserves at the rate of 50,000 bbls. a day, and there is every reason to believe that this rate will shortly be increased. The further growth of the company should continue along these lines and should be supplemented by adequate handling facilities."

Considerable sums also have been spent on manufacturing, marketing and transportation, the refinery having been increased to 25,000 bbls. a day, while pipelines are gathering and moving 75,000 bbls. a day.

Regarding expenditures since the start of 1924, Mr. Marland states $52,200,000 went into properties as capital investment and $16,250,000 for retiring bonds and bank loans at the end of 1923. This total of $68,450,000 which excludes the sale and subsequent retirement of $20,000,000 two-year notes, and the sources from which the money was derived, are given in the following table:

Expenditures

Retirement of debt and bank loans as of Dec. 31, 1923	$16,250,000
Refinery, casinghead plants, pipelines, marketing, etc.	18,300,000
*Acquisition of new leases and lease development	39,900,000
Total	$68,450,000

Sources Derived

Proceeds of sale of stock	$25,200,000
Reserves against refinery, casinghead, pipelines, marketing, etc.	5,775,000
Reserves against leases and development of leases	15,925,000
Surplus earnings after dividend	18,350,000
Miscellaneous	3,200,000
Total	$68,450,000

*These expenditures represent actual bonuses paid for leases and cost of drilling wells; do not include $7,421,000 currently charged against earnings for geological and investigation expenses in connection with lease acquisitions.

The total of $25,200,000 derived from the sale of stock arose from $22,400,000 received from J. P. Morgan & Co. in the purchase of treasury stock and $2,800,000 from subscriptions in exercising of stock warrants.

The special meeting of stockholders will vote on increasing authorized stock to 2,400,000 from 2,000,000 shares, and holders of record October 16 have the right to vote. Stock of record date on subscription privilege has not been announced yet.

The consolidated balance sheet of the Marland Oil Co. as of September 30, 1926, partly estimated and after giving effect to proposed financing, compares as follows:

Assets

	1926	†1925
*Fixed assets	$ 75,274,980	$ 62,170,441
Invest. and advan.	12,387,160	12,708,456
Cash	9,593,376	13,881,802
Bills, accts. receiv.	6,096,781	7,559,917
Crude oil	10,175,337	3,311,291
Refined products	5,161,776	3,507,000
Materials and sups.	3,077,830	1,745,044
Miscel. accrued items	50,063	182,691
Deferred items	1,644,751	1,629,712
Total	$123,462,054	$106,496,441

Liabilities

Capital stock and surplus	$116,856,158	$ 94,670,125
Minority interest	22,291	139,466
Accts. payable	5,708,130	2,563,431
Miscel. accrued items	361,891	437,346
Gold bonds		7,796,000
Fed. tax reserve	513,584	
Equipment trust certificates		507,000
Contingent reserve		381,230
Total	$123,462,054	$106,496,441

*After depreciation and depletion. †Represented by 2,311,316 no par shares. ‡Actual.

Crescent Pipe Line

Crescent Pipe Line Co. has practically completed removal of its 274 miles of line and directors will probably announce a distribution of the proceeds of liquidation about November 1, whe nsalvaging work will be completed. The pipe has already been sold.

Mid-Continent Petroleum

The Mid-Continent Petroleum Corp. and subsidiaries report August net earnings of $1,549,042 after deductions for surrendered leases, dry holes and abandonments, but before depreciation, depletion and Federal taxes. Net earnings for the first eight months of 1926 totaled $9,673,624. The company has outstanding 1,357,415 shares of no par value stock.

Oil Well Supply

Louis Brown, president of the Oil Well Supply Co., has denied the report that Oil Well Supply Co. will merge with Continental Supply Co. Continental is a subsidiary of the Youngstown Sheet & Tube Co.

Pandem Oil Co.

The Pandem Oil Co. reports August profit of $55,384, after expenses, compared with $51,866 in July.

Skelly Oil

The Skelly Oil Co. and subsidiaries report August profit of $644,257 after depreciation and depletion, but before Federal taxes, the largest monthly earnings in the history of the company. This compares with $77,189 in August, 1925.

A quarterly dividend of 2 per cent (50 cents per share) upon the outstanding capital stock of Skelly Oil Co. has been declared, payable December 15, 1926, to stockholders of record at the close of business November 15, 1926. This brings the total dividends for the current year to $2 per share.

Oklahoma Natural Gas Co.

Holders of certificates of deposit for stock of Oklahoma Natural Gas Co., the old company, in addition to the cash distribution of $10 a share recently made will receive $21.86 par value of 6 per cent first mortgage bonds, about 64 cents a share cash for each share held and one share of new common stock for each 22 shares. Date has not been set for the next distribution but liquidation will be completed by July 1, 1927.

A banking syndicate headed by A. A.

(Continued on Page 146)

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	Clos. Quot. Oct. 11	Clos. Quot. Oct. 4	1926 High	1926 Low	1925 High	1925 Low	1924 High	1924 Low
Amerada Corp.	..	29	31¼	32⅝	21⅝	..	..	..	..
Atlantic Ref., com.	100	99½	109½	128⅝	97	117½	96½	140½	78½
Barnsdall "A"	25	25⅝	27	33½	23½	33½	18⅝	29½	14
California Pet., com	25	30	31½	38½	30⅝	34⅝	23⅝	29	19⅝
Houston Oil	100	52½	57	72	50¼	85	59	82½	61
Independent Oil & Gas	..	24	25½	34	20¼	41⅝	13½	16¼	5⅜
Indian Refining	10	9	9	13⅜	9½	14¼	5½	7	3⅜
Lago Oil & Trans.	..	19⅜	20⅞	24½	19¼	..	..	..	..
Louisiana Oil	10	14⅝	15½	19⅝	12	23⅜	13⅜	..	..
Maracaibo	..	17⅝	18½	28⅞	18⅜	35½	20⅜	37¼	25⅜
Marland	..	52¼	54¼	63⅝	49¼	80½	32⅝	42	29
Mexican Seaboard	..	8½	9⅜	13⅜	6	22½	9	26⅜	14½
Mid-Continent Pet.	..	29½	30	41	25⅝	38	25⅜	40¼	22⅝
National Supply	50	71¼	70½	71	55½	71	54⅜	72½	54
Oil Well Supply	25	34½	34⅞	36	30	38	33⅜	..	..
Pan. Amer., B	50	62½	65	73⅜	56½	83⅞	59½	65	44½
Pan. Amer., Western B	..	30½	33	46	34	49⅝	37¼	..	..
Phillips Pet.	..	47⅜	48½	52⅜	42½	47½	36¼	52¼	28½
Producers & Refiners	50	17½	15¼	17½	11	32½	12½	32½	29⅜
Pure Oil, com.	..	26	26½	31	25⅜	33⅜	25½	30¼	20
Royal Dutch, N. Y., sh.	13.40	47⅜	49⅜	57⅜	49⅜	57⅜	48¼	59½	40⅜
Shell Transport	10	*42	*42	48⅞	42	49	39⅜	42	33
Shell Union, com.	..	27½	28½	30⅜	24	28⅜	21⅝	22½	15⅜
Simms Pet.	10	18	17⅜	28⅝	16½	28½	17⅜	24	10⅝
Sinclair Consolidated, com	..	18¼	19½	24⅞	19⅜	24⅞	17	17½	15
Skelly Oil	25	32⅜	33⅜	37¼	27	32½	21⅜	29	17¼
Standard of California	25	60⅜	60	63¼	54	67¼	51½	68½	55½
Standard of New Jersey, com.	25	42	42⅝	46⅜	40¼	47½	38⅜	41½	33
Sun Oil Co.	..	32½	33½	41⅜	30½	43⅜	34⅝	..	..
The Texas Company	25	52⅝	54⅜	58	48	55	42⅝	45⅜	37⅜
Texas Pacific Coal & Oil	10	13⅝	14⅝	19½	12½	23⅝	11	15½	8¼
Tide Water Oil	25	28	*30	39¼	30½	..	..	..	..
Transcontinental	..	3⅞	4	5½	3	5⅝	3½	6½	3⅜
Union Oil of California	25	52⅝	53½	58⅜	37¼	43⅜	33⅛	30	35½
Union Tank, com.	100	116	116	120⅜	84¼	‡134	118	132⅜	94
White Eagle Oil & Refining	..	26¼	25⅝	29⅜	25½	31⅜	25⅞	29⅜	23½
Standard Oils									
Anglo-American Oil	£1	*17	18¼	19⅜	16½	26⅜	17½	18¾	14⅜
Borne Scrymser	100	*260	*270	295	226	240	205	164	150
Buckeye Pipe Line	50	*44	46	59½	47⅜	72	63½	85½	51
Chesebrough Mfg. Co.	25	*71	*72	72⅜	63	74	48¼	62½	29¼
Continental	10	19⅛	19⅜	25⅞	19¼	31½	21⅜	..	..
Crescent Pipe Line	25	*15¼	*15½	16	14½	17½	10	20	11⅜
Cumberland Pipe Line	100	*107	*107	137	108	156	128	148	108
Eureka Pipe Line	100	*43½	*46	63⅜	47⅜	96	63¼	105	74
Galena Signal, com.	100	16⅞	16½	32½	15⅜	68½	23½	69⅜	62½
Humble Oil & Refining Co.	25	56⅜	*56⅝	68⅜	52	99	42½	43⅜	36
Illinois Pipe Line	100	*134½	*134½	144	131	154½	124	161	123
Imperial Oil, Ltd.	..	35	35¼	38⅜	32½	39¼	27¼	119	99
Indiana Pipe Line	50	59⅜	*60	68	58	84	87½	100	66
International Pet. Co.	10	31⅜	32	35¼	28⅜	25⅜	22¼	34⅜	16⅞
National Transit Co.	12.50	13½	*13½	20⅜	14½	25½	16½	25⅞	20⅜
New York Transit	100	*30	31	51½	31	79	50	97	54½
Northern Pipe Line	100	*65	*67	80½	68	88	67½	107½	72
Ohio Oil Co.	25	57½	57½	67⅜	55⅜	75¼	60	79½	53
Penn.-Mex. Fuel	25	*17	17	24¼	15	44	19	35⅜	27
Prairie Oil & Gas	25	49½	50¼	60¾	48	65½	46⅜	269	193
Prairie Pipe Line	100	*124	124	127	122½	129⅜	105	111	100
Solar Refining Co.	100	195	203	212	184½	259	200	240	170
South Penn Oil	25	36⅜	37⅜	50	35	‡197	139	176	117
Southwest Pa. Line	100	*51	*51	56	47½	84	50	89	68
Southern Pipe Line	50	*23¼	*24½	74½	61½	103	63	100	80½
Standard of Indiana	25	62⅜	62½	70½	61⅝	70⅜	69⅛	69⅝	54¼
Standard of Kansas	25	19⅝	20½	36½	21	46	30¼	50¼	32⅜
Standard of Kentucky	25	117	120¼	134⅝	108	137	114⅞	121⅞	101
Standard of Nebraska	25	43¼	45½	†61½	†42	270	231	262	198
Standard of New York	25	30⅝	31⅝	47¼	30⅝	48⅝	40	48	37⅝
Standard of Ohio, com.	100	293	*295	362	292½	369	338	337½	277
Swan & Finch, com.	25	*15	16¼	21	18	27	12	28	20
Vacuum Oil	25	94½	96	109⅝	94¼	109½	80½	83½	50½
Miscellaneous									
Gulf Oil Corp. of Pa.	25	89¾	91¾	95	82½	98¼	63½	67⅝	56
Tidewater Associated	..	22¼	22⅝	27	21	..	..	..	..

*Bid, no sales. ‡Old stock. †New stock.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Oct. 11	56.54	Sept. 3	60.16	Aug. 2	59.76
Oct. 4	57.93	Aug. 30	59.86	July 26	58.44
Sept. 27	58.78	Aug. 23	59.06	July 19	59.45
Sept. 20	58.46	Aug. 16	59.34	July 12	59.43
Sept. 13	59.06	Aug. 9	59.35	July 2	60.38

Back-Stage

Grimy and soaked with perspiration he inched his way along the narrow passage—pushing a half-extended six-foot rule before him, guarding as best he could a clip-board of notes from the clouds of dust and soot—an American Appraiser getting the facts no matter how obscure they may be.

Half buried behind great piles of records he gave a final twist to the crank of a calculating machine, copied off the figure, and pushed back the score of manufacturers' catalogues, price lists, discount sheets, the raw materials of his work—an American Appraisal statistician correlating the facts no matter how complicated they may be.

Before them were spread the inventory pages of an appraisal, the final summaries, the numerous reports of field appraiser, pricer, statistician—a microscopic, X-ray, and bird's-eye view combined of a great manufacturing plant. Questions—comparisons—deliberation—decision. "Two million three hundred thousand in sound values,"—American Appraisal executives applying carefully gathered and correlated facts in establishing final value.

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The American Appraisal Company

MILWAUKEE

PUBLIC UTILITIES · INDUSTRIALS · REAL ESTATE PROPERTIES · NATURAL RESOURCES

A NATIONAL ORGANIZATION

TEXAS PANHANDLE

(Continued from Page 40)

completed for 30 bbls. in granite wash at 2,211-91 feet and made 15,000,000 feet of gas at 2,161-85 feet. Murchison & Fain's No. 1 Binkley & Cain, Section 55, Block 24, was dry and abandoned at 2,440 feet in granite wash and there was no show of oil.

DAILY AVERAGE PRODUCTION AMARILLO DISTRICT
Week Ending October 9, 1926
Hutchinson County

Company—	Wells	Daily Av.— Last Week	This Week
Alaska Pet. Co.	1	50	60
Amerada Pet. Co.	9	440	455
American Ref. Co.	2	70	70
Apex Oil Co.	2	250	240
Badger Oil Co.	2	165	175
R. G. Barnum	1	0	20
Buffalo Oil Co.	1	35	35
Canadian River O. Co.	4	475	485
Canyon Oil Co.	5	4,800	11,500
Center Dome Oil Co.	1	0	0
Centerfield Oil Co.	1	0	0
Coble-Whittenberg	3	800	950
Continental Oil Co.	1	0	10
Currie Bros. & J. R. Phillips	2	150	0
Cockrell & McIlroy	3	500	510
Delmar Oil Co.	1	35	35
Derby Oil Co.	4	1,325	1,240
Devonian Oil Co.	3	500	520
Dixon Creek Oil Co.	21	6,160	7,000
Double Five Oil Co.	1	50	60
Douglas O. Co. & Cline	1	10	15
E. J. Dunnigan et al.	3	1,150	955
Echo Oil Co.	3	1,125	1,650
Empire G. & F. Co.	7	3,440	6,515
Fly-Blackburn Oil Co.	2	225	250
Gates Oil Co.	4	400	400
Goldeline Oil Co.	2	310	300
Golding & Phillips	1	0	0
Gulf Prod. & Panhandle Ref. Co.	36	7,295	8,900
Gulf Prod. Co.	23	4,325	4,080
Heywood et al	2	0	60
J. K. Hughes Dev. Co.	14	2,150	2,190
Holmes, Currie & McKnight	3	320	450
W. H. Holmes	1	250	230
Hutchinson Co. O. Co.	1	0	0
Dan A. Japet	3	575	640
J. H. Lenix	1	0	0
Lenix & Patterson	1	285	170
Lucky 10 Oil Co.	3	1,100	680
Marland Oil Co.	34	17,020	17,710
Midwest Explo. Co.	6	335	1,260
Minnehoma Oil Co. and Kistler	1	180	75
McMan Oil & Gas Co.	15	6,920	5,790
McIlroy & Herring	4	435	430
S. D. & W. W. McIlroy	5	1,535	1,770
McIlroy Bros. et al	3	320	300
J. H. Middleton	3	55	60
Murchison & Fain	1	365	400
Newby Oil Co.	1	45	75
New Domain Oil Co.	3	110	125
Phillips & Heywood	2	2,200	1,500
J. R. Phillips	1	20	25
Phillips Pet. Co.	67	18,420	23,005
Prairie O. & G. Co.	21	2,910	3,050
Relief Oil Co.	3	1,410	840
Riley & Holmes	2	340	420
Roxana Pet. Corp.	8	2,085	2,060
Ryan Pet. Co.	3	490	480
Skelly Oil Co.	13	7,575	3,500
Skiatex Oil Co.	4	900	1,000
J. L. Smith	2	230	200
Smith & Bynum	2	350	275
Spring Creek Oil Co.	4	720	910
Summit Oil Co.	2	370	370
Sunny Jim Oil Co.	5	610	700
Sunburst Oil Co.	2	1,200	1,450
Sunrise Oil Co.	1	10	5
Travelers Oil Co.	2	640	625
Triangle Oil Co.	2	2,600	3,000
J. D. Ward	1	60	60
J. D. Ward et al.	1	50	50
Westex Oil Co.	8	3,700	3,440
White Eagle O. & R. Co.	17	2,500	3,390
J. O. Whittington	1	0	0
Total Hutchinson Co.	429	115,415	130,410
Average per well		286	304
Carson County			
Amarillo Oil Co.	1	0	0
American Ref. Co.	7	535	515
Gates Oil Corp.	1	10	10
Gulf Prod. Co.	14	405	395
Marland Oil Co.	12	2,160	2,210
Roxana Pet. Corp.	1	400	425
W. W. Silk et al	3	120	110
Skelly Oil Co.	2	90	80
Sunny Jim Oil Co.	2	40	45
The Texas Company	11	285	285
Total Carson County	54	4,020	3,925
Average per well		74	72
Gray County			
Empire G. & F. Co.	1	10	10
Gulf Prod. Co.	2	720	1,560
Magnolia Pet. Co.	2	70	75
McMan O. & G. Co.	1	410	325
Prairie O. & G. Co.	3	1,080	1,060
Wilcox-Pampa Oil Co.	7	2,995	2,750
The Texas Company	1	0	20
Total Gray County	17	5,285	5,800
Average per well		311	341
Potter County			
Amarillo Oil Co.	1	25	30
Wheeler County			
Gibson Oil Corp.	2	150	150
Continental Oil Co.	2	200	135
Mid-Kansas O. & G. Co.	1	25	30
Midwest Explo. Co.	3	15	15
Total Wheeler Co.	8	390	330
Average per well		48	41
Grand total Pan.	509	125,135	140,495
Average per well		259	276
Grand total 4 weeks ago	414		117,729
Average per well 4 weeks ago			284

NORTH TEXAS FIELDS

(Continued from Page 39)

at 1,330 34½ and 1,343½-53 feet. Simms Oil Co.'s No. 8 Turbeville-A swabbed 250 bbls. and pumped 200 bbls. at 1,500-31 feet. The Texas Company's No. 10 Turbeville-C, swabbing 52 bbls. per hour at 1,499-1,526 feet; No. 11, swabbing 725 bbls. 1,493-1,524 feet. Texhoma Oil & Refining Co.'s No. 17 Hamilton was dry and abandoned at 1,814 feet. Texhoma Oil & Refining Co. and Staniforth's No. 9 Kemp & Kempner, Block 63, swabbing 112 bbls. in 18 hours at 1,790-92 feet. Tidal Oil Co.'s No. 1 Farmer, estimated 35 bbls. at 1,468 73½ feet and 1,492-94½ feet.

Brown County

Curry & Moore's No. 5 Wooldridge was shot with 50 quarts at 1,228-60 feet and is making 600 bbls.; No. 6 was shot with 40 quarts at 1,220-50 feet and making 250 bbls.; No. 7 was shot with 50 quarts at 1,227-62 feet and making 600 bbls. Empire Gas & Fuel Co.'s No. 1 Green was shot with 30 quarts at 1,527-52 feet and had a small show of oil. Gillespie's No. 14 Henson was estimated 15 bbls. at 1,262-88 feet, total depth 1,292 feet. Gilman & McMurray's No. 7 Thompson was shot with 20 quarts at 1,218 36 feet and making 100 bbls. Kone Production Co.'s No. 5 Foster was shot with 20 quarts at 1,199-1,220 feet and making 100 bbls. Louisiana Oil & Refining Co.'s No. 6 Henslee was shot with 20 quarts at 1,266-79 feet and making 15 bbls., total depth 1,285 feet. McLester Oil Co.'s No. 9 Josie Wooldridge was dry and abandoned at 1,355 feet. Midwest Exploration Co.'s No. 2-A Suttles was shot with 20 quarts at 1,122-35 bbls. and making 5 bbls. Mitcham's No. 1 Perry was shot with 10 quarts at 1,227-40 feet and estimated 25 bbls.

Callahan County

Canary and others' No. 1 Cutbirth was dry and abandoned at 3,050 feet. Cosden and others' No. 1 Ramsey & Estes, dry and abandoned at 1,800 feet. Cranfill & Reynolds' No. 6 Henderson, making 40 bbls. at 1,392-1,404 feet. Florence Oil Co.'s No. 2 Lamar, making 10 bbls. at 1,412 18 feet. Oklavania Oil Co.'s No. 1 Hays, show of oil and gas at 1,665 feet, top of sand. Pandem Oil Corp.'s No. 1 Cuthirth, abandoned location. T. B. Slick's No. 3 Bond, estimated 75 bbls. at 1,389-1,400 feet, total depth 1,404 feet.

Coleman County

Curtis and others' No. 1 Sealy & Smith, dry and abandoned at 3,028 feet. Kirby Petroleum Co's No. 1 Harris, dry and abandoned at 2,500 feet.

Cooke County

Hooser Oil Co.'s No. 7 Dennis swabbed 378 bbls. in 24 hours and pumped 200 bbls. in 24 hours at 1,188-1,276 feet. Lynch, Stahl & Burris' No. 2 Danglemayer, abandoned at 987 feet. Sun Oil Co.'s No. 4 Hyman made 55 bbls. of oil from sand and shale at 1,203-67 feet.

Eastland County

Chestnut & Smith's No. 1 Noble, dry and abandoned at 3,545 feet. Continental Oil & Gas Co.'s No. 1 Ramsower was shot with 20 quarts at 3,565-85 feet and estimated 35 bbls., total depth 3,595 feet. It will be shot again.

Foard County

Central Oil Interests' No. 1 Burress shut down at 3,003 feet and will abandon.

Knox County

Brazos Bend Oil Co.'s No. 1 Chalk, temporarily abandoned at 1,920 feet. Robert Saunders' No. 1 Lawson, temporarily abandoned at 1,600 feet.

Montague County

Camp Oil & Gas Co.'s No. 1 Snapp estate was abandoned as dry at 2,008 feet. Marland Oil Co.'s No. 4 Maddox swabbed 85 bbls. at 858-69 and 870-90 feet. F.H.E. Oil Co.'s No. 5 Howard and others-A made 25 bbls. at 1,325-50 feet; No. 2 Salmon and others-B made 12 bbls. at 918-28 feet. Gulf Production Co.'s No. 2 N. J. Howard pumped 175 bbls. at total depth of 1,160 feet. Harris & Simons' No. 4 Maddox pumped 75 bbls. from sand at 845-59 feet. Humble Oil & Refining Co. had a 75-bbl. swabbing well in No. 9 Maddox, at 874 90 feet.

Pure Oil Co.'s No. 1 Maddox-D was good for 50 bbls. at 832-53 feet; No. 4 Maddox-C was a 70-bbl. completion at 885-908 feet. The Texas Company's No. 3 Gist-B pumped 60 bbls. at 852-61 feet. No. 1 Hodges was a duster at 2,341 feet. No. 4 Martin was a 100 bbl. well in broken sand at 1,140-45 feet and solid sand at 1,166-69 feet; No. 21 Oldham made 82 bbls. at 1,072-1,130 feet, with shale breaks; No. 22 was plugged as a failure at 1,456 feet; No. 24 was making 50 bbls. from sands at 1,368-77, 1,380-85 and hard sand at 1,385-90 feet. Texhoma Oil & Refining Co.'s No. 5 Boulding-A pumped 106 bbls. at 1,037 54 feet, total depth 1,099 feet; No. 4 Maddox-A pumped 37 bbls. in 14 hours at 869-92 feet; No. 11 Rowland swabbed 430 bbls. and pumped 240 bbls. at 1,962-96 feet. No. 12 pumped 31 bbls. at 1,056-75 and 1,085-90 feet.

Palo Pinto County

Chestnut & Smith Corp.'s No. 1 Guest was dry and abandoned at 3,825 feet.

Shackelford County

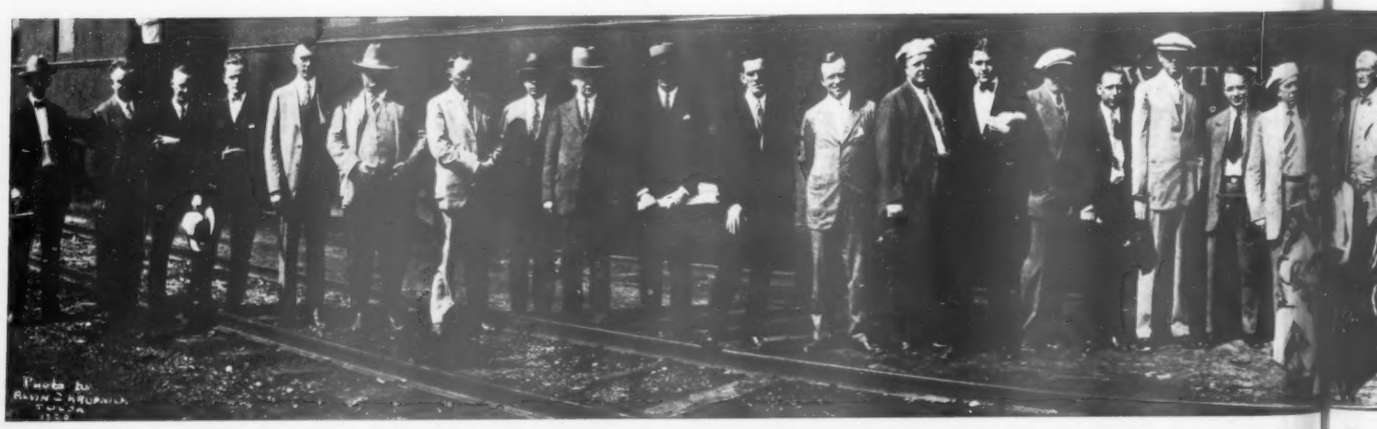
Independent Oil & Gas Co.'s No. 2 Davis pumped 100 bbls. at 1,462-66 feet. Roeser & Pendleton and Marland Oil Co.'s No. A-26 Cook A 84 pumped 160 bbls. at 1,322-72 feet, total depth 1,337 feet. No. 30-A Cook A-84 pumped 125 bbls. at 1,316-31 feet. Roeser & Pendleton's No. 1 Cook B-60 made 500 bbls. at 1,283-96 feet; No. 7 Cook B 60 made 528 bbls. at 1,192-1,204 feet; No. 8-B-60 was dry and abandoned at 1,223 feet; No. 19 Cook B-85 was also a failure and plugged at 1,246 feet. Southern Petroleum Exploration Co.'s No. 1 Dyer pumped 12 bbls. initially at 928-38 feet after a 20-quart shot. Tannehill Oil Co.'s No. 1 Moberly, in Section 59 E. Myer Land, produced 504 bbls. the first 24 hours along with 4,000,000 feet of gas from sand at 1,127 30 feet. The Texas Company's No. 1 Osborne made 75 bbls. of oil and 25 bbls. of water from sand at 602-19 feet after plugging back from 795 feet.

Stephens County

Texas Pacific Coal & Oil Co.'s No. 1 Gardenshire, Account 2, was completed for 4,500,000 feet of gas at 1,550-90 feet.

Associated Petroleum Co.'s No. 1 Bu-

SKELLY OIL COMPANY OFFICIALS AND GUESTS WITH OSAGE BAL



The 10-day educational trip through the Mid-Continent Field of 30 eastern bankers and financial writers, guests of W. G. Skelly, president of Skelly Oil Co., came to an end when the entire party journeyed to Pawhuska for the Government's recent auction sale of Osage Indian leases. Chief Lookout of the Osage tribe, visited the Skelly party at their private Pullman cars, where the above panorama picture was taken. Chief Lookout, with his wife, daughter and son-in-law, are seated in the center foreground. Those standing are, from left to right: Frank Greene, chief geologist; Howard J. Lawler, head of land department; Fred W. Robertson, purchasing agent; John Freeman, production department executive; R. E. Holcomb, assistant treasurer; Chief Roddy, Pawhuska; F. A. Pielsticker, of Eldorado, Kans., vice president in charge of refining division; A. F. Winn, traffic manager; Patrick McEvoy, New York Journal of Commerce; Keith Fanshier, Chicago Journal of Commerce; Morton F. Stern, J. S. Bache & Co., New York; John H. Whelen, Carstairs & Co., Philadelphia; William B. Anderson, Block, Maloney & Co., New York; Leroy H. Lance, Wall Street Journal; E. Walter

chanan was estimated good for 4,000,000 feet of gas at 685-91 feet and was shut down. Cranfill & Reynolds' No. 1 Lee was completed for 8,000,000 feet of gas at 1,303-18 feet, total depth 1,323 feet. Humble Oil & Refining Co. abandoned its No. 1 McKeichen at 936 feet. McCurdy and others also plugged their No. 1 Ledbetter as a failure at 750 feet. Martin & Hines' No. 1 Davis was likewise a failure at 1,641 feet.

Wichita County

Clark and others' No. 9 Ward & Todd was estimated good for 100 bbls. at 1,867-72 feet. Clark, Waggoner & Hammond's No. 3 Ward & Todd swabbed and flowed 200 bbls. at 1,770 78 and 1,803-10 and 1,890-1,903 feet. Gulf Production Co.'s No. 39 S. B. Burnett and others-A, Tract B, was dry and abandoned at 1,967 feet. Hereford Oil Co.'s No. 4 Allingham-A swabbed 40 bbls. at 1,383-85 feet. Kimmel & Dillard's No. 3 Fassett & Tuttle was dry and abandoned at 1,375 feet. Magnolia Petroleum Co.'s No. 1 Fassett made 24 bbls. at 1,359-65 feet; No. 3 Fassett made 8 bbls. in the first 8 hours at 1,359-67 feet. Panhandle Oil & Refining Co.'s No. 1 Riley-Griffin swabbed 240 bbls. in 18 hours and was cleaning out sand at 1,787-89 feet. W. A. Patterson's No. 2 Douglas, Block 2, pumped 15 bbls. at 1,064-80 feet.

Perkins, Cullum & Stump's No. 6 Chilson made 20 bbls. at 1,166-83 feet. Simms Oil Co.'s No. 3 Chilson made 100 bbls. at 1,164 80 feet. Texhoma Oil & Refining Co.'s No. 1 Chilson-A was estimated good for 10 bbls. from broken sand at 1,177-86 feet and sand at 1,186-90 feet; No. 1 Weibner made 22 bbls. at 246½-48 feet.

The Texas Company's No. 313 Waggoner pumped 120 bbls., with no water, from sand at 1,750-56 feet.

Wilbarger County

Humble Oil & Refining Co's No. 14 Bond-B pumped 50 bbls. at 2,300 39 feet and lime at 2,394-2,420 feet; No. 7 Waggoner-I pumped 20 bbls. at 1,869-91 feet; No. 8 Waggoner-I pumped 15 bbls. at 1,885-1,907 feet. Milham corporation's No. 6 Waggoner-H pumped 20 bbls. from oil sand at 2,532 40 feet and sandy lime at 2,549-57 feet; No. 8 Waggoner-H pumped 25 bbls. from sand at 2,307-24 feet and 2,369-83 feet; No. 12 Waggoner-H pumped 20 bbls. from lime at 2,570-2,600 feet; No. 3 Waggoner-L pumped 60 bbls. from sand at 1,888-1,905 feet; No. 16 Waggoner-L pumped 140 bbls. at 2,353-63 feet.

Murchison & Fain's No. 1 Waggoner-E, located on the east line of the NW of Section 51, Block 4, H. & T. C. Survey, had a hole full of oil from sand at 1,974-92 feet and made a flow before the control head was put on. It was shut down for storage.

Phillips Petroleum Co.'s No. 1 Waggoner-C swabbed 175 bbls. from sand at 2,345-49 and 2,351-60 feet. It pumped 110 bbls. when put on the beam; No. 10 Waggoner-F swabbed 208 bbls. from sand at 2,395-2,403 feet, total depth 2,408 feet; No. 6 Waggoner-H had lime at 2,304-08 feet and sand at 2,333 37 feet, total depth 2,396 feet and swabbed 200 bbls. estimated; No. 7 Waggoner-H swabbed 175 bbls. at 2,396-2,416 feet, total depth 2,430 feet; No. 2 Waggoner-R pumped 60 bbls. from lime at 2,294-98 feet and sand at 2,329-41 feet.

Stockton & Maxwell's No. 1 Zipperle was dry and abandoned at 1,420 feet. Waggoner Refining Co.'s No. 1 Waggoner D pumped 20 bbls. following a 10-quart shot at 1,940-56 feet; No. 2 Waggoner-D pumped 40 bbls. from sand at 1,943-52 feet.

Young County

Atlantic Oil Producing Co.'s No. 1 Keen was dry and abandoned at 1,006 feet. Bridwell & Mayfield's No. 7 Williams made 18 bbls. at 664 73 feet. Jeffers & Jeffers' No. 1 Ferguson was dry and abandoned at 600 feet. Madden & Hunt's No. 8 Benson made 20 bbls. at 870-920 feet. McMullen and others' No. 2 Prideaux was a failure at 705 feet and plugged; No. 3 Prideaux was also abandoned at 627 feet.

Nance & Lucas' No. 2 Boozer was estimated good for 125 bbls. at 2,187-90 feet and was put on the pump.

Robert Oil Co. and Carter & Ruff's No. 5 Stewart made 108 bbls. at 809-25 feet; No. 7 Stewart was dry and abandoned at 867 feet; No. 8 was estimated at 35 bbls. at 807-34 feet. Simms Oil Co.'s No. 3 Routon made 10 bbls. at 865-70 feet. Texas Unity Oil Co.'s No. 1 Hunt was dry and abandoned at 1,050 feet. Tidal Oil Co.'s No. 18 Benson A made 15 bbls. at 912-24 feet; No. 19 Benson-A made 20 bbls. at 914-26 feet. Wichita Producing Co.'s No. 9 Benson made 10 bbls. at 1,079-82 feet.

NORTH CENTRAL TEXAS
Estimated Production for Week Ending October 9, 1926

Ranger District—	This Week	Last Week
Brown County	12,965	12,642
Callahan County	4,139	4,217
Coleman County	1,578	1,770
Comanche County	1,792	1,780
Palo Pinto County	418	432
Ranger	5,758	5,463
Shackelford County	8,877	10,128
Stephens County	11,834	11,082
Total Ranger district	47,361	47,514
Wichita Falls District—		
Electra	18,742	18,944
Burkburnett	11,650	11,656
Iowa Park	4,278	4,311
Archer County	32,579	32,337
Clay County	694	647
Wilbarger County	13,956	14,126
Montague County	8,716	8,329
Young County	8,213	8,213
Jack County	205	215
Throckmorton County	1,436	1,394
Baylor County	118	142
Cooke County	691	471
Total Wichita Falls dist.	101,278	100,804
West Texas District—		
Big Lake Field	28,770	29,262
Crane County	1,490	712
Crockett County	1,036	1,138
Howard County	387	401
Jones County	608	700
Mitchell County	8,253	8,467
Scurry County	55	50
Upton County	11,094	9,826
Total West Texas district.	46,692	45,546
Grand total	195,331	193,864
Increase	1,467	

PRODUCTION BY FIELDS FOR WEEK ENDING OCTOBER 4, 1926

Electra

Atlantic Oil Prod. Co.	54
Empire Gas & Fuel Co.	705
Gulf Prod. Co.	842
Humble Oil & Refg. Co.	156
Magnolia Pet. Co.	3,375
Panhandle Ref. Co.	42
Phillips Petroleum Co.	15
Prairie Oil & Gas Co.	91
Rio Bravo Oil Co.	542
The Texas Company	3,567
Texhoma Oil Ref. Co.	1,305
Miscellaneous	8,222
Total	18,916

Burkburnett

Gulf Prod. Co.	441
Humble Oil & Ref. Co.	411
Magnolia Pet. Co.	2,490
Panhandle Ref. Co.	203
Prairie Oil & Gas Co.	10
Simms Oil Co.	20
Sinclair Oil & Gas Co.	51
Skelly Oil Co.	150
The Sun Oil Co.	49
The Texas Company	359
Texhoma Oil & Ref. Co.	482
Miscellaneous	6,990
Total	11,656

Iowa Park

Atlantic Oil Prod. Co.	54
Gulf Prod. Co.	237
Humble Oil & Ref. Co.	139
Magnolia Pet. Co.	310
Panhandle Ref. Co.	72
Roxana Petroleum Corp.	7
Simms Oil Co.	162
The Texas Company	178
Texhoma Oil & Ref. Co.	492
Miscellaneous	2,700
Total	4,351

Wilbarger

Atlantic Oil Prod. Co.	50
Empire Gas & Fuel Co.	832
Gulf Prod. Co.	54
Humble Oil & Ref. Co.	2,939
Phillips Petroleum Co.	5,792
Prairie Oil & Gas Co.	126
Roxana Petroleum Corp.	308
The Texas Company	21
Texhoma Oil & Ref. Co.	81
Miscellaneous	3,920
Total	14,123

Archer

Atlantic Oil Prod. Co.	189
Barnsdall Oil Co.	881
Cosden Co.	368
Empire Gas & Fuel Co.	512
Gulf Prod. Co.	2,105
Humble Oil & Refining Co.	954
Independent Oil & Gas Co.	5
Magnolia Petroleum Co.	1,551
Marland Oil Co.	762
Panhandle Ref. Co.	120
Phillips Petroleum Co.	565
Prairie Oil & Gas Co.	1,796
Roxana Petroleum Corp.	502
Simms Oil Co.	1,376
Sun Oil Co.	240
The Texas Company	6,146
Texhoma Oil & Ref. Co.	2,709
Tidal Oil Co.	30
Miscellaneous	11,444
Total	32,255

Young

Atlantic Oil Producing Co.	646
J. S. Cosden	201
Gulf Production Co.	183
Humble Oil & Ref. Co.	258
Magnolia Petroleum Co.	121
Marland Oil Co.	1
Mid-Kansas Oil & Gas Co.	5
Panhandle Ref. Co.	134
Phillips Petroleum Co.	18
Prairie Oil & Gas Co.	10
Roxana Petroleum Corp.	138
Simms Oil Co.	524
Sinclair Oil & Gas Co.	340
Sun Oil Co.	209
The Texas Company	316
Texhoma Oil & Ref. Co.	295
Tidal Oil Co.	131
Miscellaneous	4,680
Total	8,210

Stephens

Arkansas Fuel Oil Co.	20
Empire Gas & Fuel Co.	30
Gulf Prod. Co.	998
Humble Oil & Ref. Co.	850
Magnolia Petroleum Co.	340
Mid-Kansas Oil & Gas Co.	1,410
Phillips Petroleum Co.	365
Prairie Oil & Gas Co.	745
Republic Prod. Co.	130
Roxana Petroleum Corp.	45
Simms Oil Co.	25
Sinclair Oil & Gas Co.	70
Sun Oil Co.	170
The Texas Company	910
Texas Pacific Coal & Oil Co.	1,050
Miscellaneous	4,1110
Total	11,006

Shackelford

Amerada Petroleum Corp.	2
Empire Gas & Fuel Co.	15
Humble Oil & Ref. Co.	980
Independent Oil & Gas Co.	6
Magnolia Petroleum Co.	50
Phillips Petroleum Co.	570
Prairie Oil & Gas Co.	10
The Texas Company	170
Texhoma Oil & Ref. Co.	65
Miscellaneous	8,260
Total	10,128

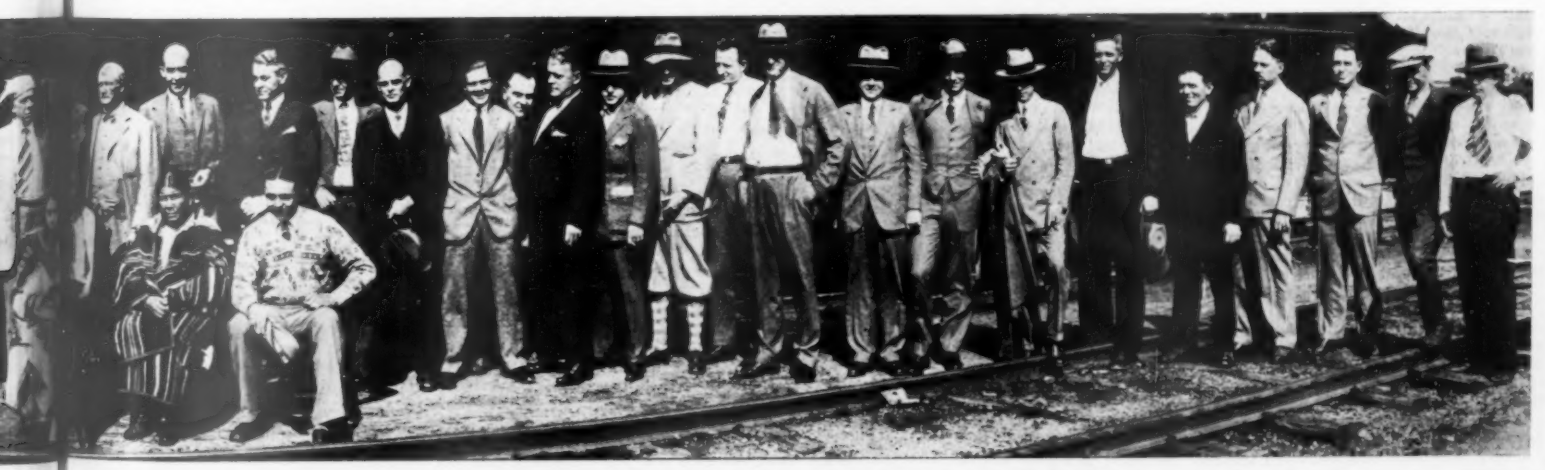
Ranger

Arkansas Fuel Oil Co.	5
Gulf Prod. Co.	473
Humble Oil & Ref. Co.	40
Magnolia Petroleum Co.	525
Mid-Kansas Oil & Gas Co.	95
Panhandle Ref. Co.	110
Phillips Petroleum Co.	15
Prairie Oil & Gas Co.	535
Republic Prod. Co.	40
Simms Oil Co.	20
Sinclair Oil & Gas Co.	280
The Texas Company	140
Texas Pacific Coal & Oil Co.	760
Transcontinental Oil Co.	35
Miscellaneous	2,350
Total	5,423

Eastland-Comanche

Empire Gas & Fuel Co.	5
Humble Oil & Ref. Co.	90
Magnolia Petroleum Co.	550
Mid-Kansas Oil & Gas Co.	130
Phillips Petroleum Co.	30
Prairie Oil & Gas Co.	75
Sinclair Oil & Gas Co.	20
Skelly Oil Co.	125
The Texas Company	100

BAL CHIEF AT GOVERNMENT AUCTION SALE OF LEASES



Mockler, New York Commercial and United Press; George Hammond, Chicago Tribune; Nelson B. Nelson, S. B. Chapin & Co., New York; Robert Thorn, New York Central Railroad; Timothy Walsh, New York World; W. G. Skelly; C. C. Herndon, vice president and general manager; Glenn Ford McKinney, director, New York; Vaughan Spalding, Farnum, Winter & Co., Chicago; George S. Bole, Tulsa; R. R. Maupin, J. S. Bache & Co., Tulsa; John Hawthorne, New York Evening Journal; Tracy Turner, Jr., S. B. Chapin & Co., Chicago; Phillip P. Brown, Brown & Guest, New York; Frank R. Henderson, president New York Rubber Exchange; Guy B. de Chadenedes, New York; David G. Wells, Palmer & Co., New York; James P. Maher, New York American; Thomas Megear, director, New York; L. G. Shafer, Jesup & Lamont, New York; John Coleman, Farnum, Winter & Co., Chicago; B. G. McCloud, Union Trust Co., Chicago; Leonard M. Fanning, The Oil & Gas Journal, New York; Emby Kaye, superintendent natural gasoline production; C. C. Deardorff, tax and claim agent; R. A. Carrell, Pawhuska; H. M. Stalcup, vice president in charge of production; Glenn Condon, director of public relations.

Transcontinental Oil Co.	25
Miscellaneous	630
Total	1,780
Brown	
Cosden Co.	630
Humble Oil & Ref. Co.	3,815
Phillips Petroleum Co.	160
Prairie Oil & Gas Co.	600
Simms Oil Co.	20
The Texas Company	460
Witherspoon Oil Co.	20
Miscellaneous	6,937
Total	12,642
Callahan	
Amerada Petroleum Corp.	80
Humble Oil & Ref. Co.	2
Prairie Oil & Gas Co.	710
The Texas Company	95
Texas Pacific Coal & Oil Co.	20
Miscellaneous	3,310
Total	4,217
Miscellaneous Pools	
Reagan County	29,252
Clay County	668
Montague County	8,453
Jack County	215
Throckmorton County	1,394
Baylor County	142
Palo Pinto County	432
Coleman County	1,770
Scurry County	50
Mitchell County	3,467
Crockett County	1,096
Upton County	10,068
Total	57,007
Panhandle	
Carson County	3,999
Hutchinson County	115,667
Wheeler County	390
Gray County	5,355
Total	125,411
Grand total	317,125

REFINED MARKET TRENDS UNCHANGED

(Continued from Page 28)

Oklahoma at any time in the last few weeks although prices have declined materially, indicating that the weakening was due to the almost total lack of demand for Group 3 products. However, the monthly report of the Bureau of Mines just announced showed that fuel oil and gas oil stocks in the entire Mid-Continent increased 12,770,000 gallons during August, (indicated in accompanying table) and since August 31 demand for these products has been light.

The accompanying table reveals some interesting facts regarding refined market conditions at the beginning of September and gives the real reason for the strength or weakness of products at that time.

The early part of September gasoline prices were strong. This was a direct reflection of the fact that although crude runs to stills were increased during the month and gasoline production increased, gasoline stocks during August showed a decrease of 6,567,000 gallons. Toward the close of August there was a period of active gasoline buying as it was generally felt that September would be an exceptionally good market month.

Kerosene stocks also showed a decrease during August of 1,118,000 gallons, but since then demand for this product has been very light. The increase in stocks of gas oil and fuel oil, shown in the report, came despite the fact that during August these products were extremely tight.

Chief Uncertainties

Fuel oils and gas oils have been among the chief uncertainties. As previously mentioned these products have not been very plentiful, especially material of particular specifications, and yet stocks have shown a substantial increase and prices have weakened and declined. The few buyers, although having difficulty in obtaining desired material, have been able to get lower and lower prices.

This would indicate that there is plenty of fuel in storage but that refiners are preferring to hold the bulk of it until there is a better demand rather than dump large quantities on the market and cause a more serious break in prices.

As for gasolines, further declines in prices have placed these products also in a very uncertain position. Both sellers and buyers for some time have kept thinking that it would be impossible for gasoline prices to go lower on the basis of present high crude prices and tankwagon schedules. Yet each week sees additional reductions in quotations.

The majority of refiners, both large and small, Tuesday had reduced their quotations on U. S. Motor (58-60 437) gasoline to the trade to 10 cents. Several were quoting 9⅞ cents with resale material available at 9¾ cents. However, a few still hung at 10¼ cents, reporting some business.

The lower prices for gasolines, and refined products in general, has increased talk of a Mid-Continent crude reduction and tankwagon cut in the Standard Oil Co. of Indiana territory. It is felt that crude and tankwagon prices cannot possibly be maintained at their present levels any great length of time with refined markets so weak.

This, as previously mentioned, is largely the cause of the uncertainty in the gasoline situation. Refiners do not want to sell at lower prices because on the present basis of crude they are not making much profit, if any, and yet they do not want to be caught with much gasoline on hand made from high priced crude if there is a cut. As jobbers also keep holding off from any unnecessary buying, fearing a crude cut, refiners are faced with the additional fact that the lowest price, ability to ship promptly considered, gets the business of the limited orders being placed. This latter fact has been the drawback to sellers trying to firm markets by holding quotations.

Higher gravity gasolines continued inactive the past week but as these products were already very low in relation to U. S. Motor material, and, only limited quantities were available from Oklahoma refiners, there was but little tendency on the part of these grades to soften in price.

As a result 60-62 400 gasoline Tuesday still was held for 10½ cents as a rule and the 64-66 375 grade at 11 cents, with some resale material at 10¾ cents. There was no export demand. The Oklahoma quotations on these products, however, could be shaded considerably by north Texas refiners quoting on a basis of Group 3.

Natural Gasolines

Natural gasolines experienced further softening during the week with all grades approximately a quarter of a cent cheaper Tuesday than a week ago. The A grades were available readily at 9¼ to 9⅜ cents with the B grades at 9 cents and Grade C at 8¾ cents. These quotations were shaded and some Double B moved at 8¾ cents and some Grade C at 8½ cents.

Kerosene and Distillates

Kerosene prices were a quarter of a cent lower Tuesday but a slight tendency to steady at that figure was noted previous to the announcement of the tankwagon reduction. There was a little buying of this product in north Texas which was reflected in the Oklahoma situation by refiners holding back on offerings. The north Texas material was purchased at 6¾ cents but in Oklahoma the market ranged from 7 to 7¼ cents with a few refiners getting some business at 7½ cents. The tankwagon reduction so far had had but little effect on actual moving prices and refinery quotations have not been reduced.

Due to warmer weather in the northern states, furnace oil demand was only spotted, which was reflected in a still easier tone to distillates, but markets in themselves were not much changed. Some 36-38 distillate was available as low as 5¼ cents.

Fuel Oil and Gas Oil

Fuel oil and gas oil continued in exceptionally light demand and prices were down on most grades from 2½ to 5 cents. Some refiners advanced quotations slightly for a time during the week and held firm when it was felt that a steadier tone prevailed but Tuesday markets seemed slipping again. Low grades of fuel could be bought for $1.25. Several refiners, however, obtained $1.27½ and $1.30. The 22-26 grade was quoted at $1.30 to $1.32½; 24-26 at $1.35 to $1.37½; 26-30, $1.40 to $1.45, and 28-30 at $1.50 to $1.60. Gas oil, however, was fairly tight at 4⅛ cents with cracking stock bringing as high as 4⅜ cents.

Lubricants and Wax

There was no particular change in the lubricant and wax situation. Bright stocks continued in good demand with manufacturers well sold up while movements of neutrals and cylinder stocks were fair considering weather conditions and the season of the year.

CRUDE OIL PRICES

(Continued from Page 139)

Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES

Joseph Seep Purchasing Agency

(Effective March 8)

Penna Grade Oil in New York Transit Lines (New York)	$3.40
Bradford District Oil in National Transit Lines (Pennsylvania)	3.40
Penna Grade Oil in National Transit Lines (Pa.)	3.30
Penna Grade Oil in Southwest Pa. Lines (West Virginia)	3.30
Penna Grade Oil in Eureka Pipe Line Lines (Pa.)	3.25
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.05
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (May 17)	2.40
Corning Grade Oil in Buckeye Pipe Line Lines (Ohio) (May 22)	2.55
Somerset Medium Oil in Cumberland Pipe Line Lines (Kentucky) (May 17)	2.50
Somerset Light Oil in Cumberland Pipe Lines (Kentucky) (May 17)	2.65
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (May 19)	1.25
Gaines (Pennsylvania) (Apr. 27)	2.85
Keister (Pennsylvania) (Feb. 15)	2.30

MIDDLE WESTERN STATES

Ohio Oil Co.

(Effective May 17)

Lima	$2.48
Wooster	2.55
Illinois	2.37
Indiana	2.25
Princeton	2.37
Plymouth	1.90
Waterloo	1.35
*Western Kentucky (Sept. 8)	2.10
†Cumberland, Barren and Monroe Counties, Ky. (May 17)	2.65
‡Oil in lines of Stoll Oil Refg. Co. in Oil City, Ky.	2.65
‡Oil in lines of Stoll Refg. Co. in Tinsley Bottom, Tenn.	2.46
§Oil Springs (Canada) (May 18)	2.8
§Petrolia (Canada) (May 18)	2.8

*Posted by Indian Refining Co.
†Posted by Paragon Development Co.
‡Posted by Stoll Oil Refining Co.
§Posted by Imperial Oil Co., Ltd.

MEXICO

(Effective May 13)

*Tuxpam light (f.o.b. Mex. ports)	$1.2
†Panuco heavy (f.o.b. Mex. ports)	1.1
Tuxpam (New York)	2.1
Panuco (New York)	1.9

*Plus 32.328c tax. †17.631c tax.

NEW FINANCING FOR OIL OPERATIONS

(Continued from Page 142)

Housman-Gwathmey & Co. in association with California banking interests is expected in a few days to offer for public subscription 315,000 shares of the Pantapec Oil Co. of Venezuela, around $12 a share.

Union Oil Co. of California has contracted to develop part of Pantapec Oil Co.'s acreage in Venezuela, according to William F. Buckley, president. "Approximately 878,000 acres of Pantapec holdings will be transferred to a new operating company," he states, "to which Union Oil of California will pay $3,500,000 for development of the company's properties and other purposes. Pantapec and Union Oil Co. will share equally in the profits of the operating company. Cost of pipelines and other means of transporting oil found will not be included in these expenditures."

Westex Oil

The New England Oil & Pipe Line Co. has purchased the holdings of the Westex Oil Co. in the Panhandle Field of Texas, at a consideration said to have been $1,600,000, of which $750,000 was cash and $450,000 in 30 days and the remainder over a year.

NORTH AND WEST TEXAS WILDCATS

(Continued from Page 39)

Sec. 6, H. T. Sapp Sur. ..... Top salt 442 ft, shut down 1,974 ft.
Independent Oil & Gas Co.'s No. 7 Taylor, Sec. 6, H. T. Sapp Sur. ..... Shut down 2,575 ft.
Independent Oil & Gas Co.'s No. 8 Taylor, Sec. 6, H. T. Sapp Sur. ..... Shut down 2,355 ft.
Independent Oil & Gas Co.'s No. 9 Taylor, Sec. 6, H. T. Sapp Sur. ..... Drilling 1,485 ft, top sand.
Independent Oil & Gas Co.'s No. 10 Taylor, Sec. 6, H. T. Sapp Sur. ..... Drilling 300 ft.
Magnolia Petroleum Co.'s No. 1 Church (Univ.), SW SW Sec. 34, Blk. 30, University Sur. ..... Location.
Magnolia Petroleum Co.'s No. 2 O'Keefe (Univ.), NW NW Sec. 38, Blk. 30, University Sur. ..... Drilling 650 ft.
Magnolia Petroleum Co.'s No. 1 State-Lasseter, Sec. 35, Blk. 30, University Sur. ..... Location.
Marland Oil Co.'s No. 1 Cowden, SE cor. Sec. 81, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Moving in tools.
Marland Oil Co.'s No. 2 Hughes-Gibbs, Sec. 93, Blk. Y, C. C. S. D. & R. G. N. G. Sur. ..... Building rig.
Marland Oil Co.'s No. 2 Durham, NE cor. Sec. 82, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Moving in tools.
Marland Oil Co.'s No. 3 Durham, Sec. 82, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Building rig.
Marland Oil Co.'s No. 1 Mary Dawson, NE cor. Sec. 84, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Top sand 670 ft, drilling 1,410 ft.
Marland Oil Co.'s No. 2-D E. S. Hughes. ..... Building rig.
Marland Oil Co.'s No. 2-C E. S. Hughes, NW NE NE Sec. 86, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Top pay 2,301 ft., sulphur water 2,328 ft., total depth 2,323 ft.
Marland Oil Co.'s No. 3-C E. S. Hughes, SE NE NE Sec. 86, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Drilling 2,235 ft.
Marland Oil Co.'s No. 4-C E. S. Hughes, Sec. 86, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Building rig.
Prairie Oil & Gas Co.'s No. 1 University, NE NE Sec. 39, Blk. 30, University Sur. ..... Rigging up.
Prairie Oil & Gas Co.'s No. 2 University, SE NE NW Sec. 39, Blk. 30, University Sur. ..... Moving in tools.
Prairie Oil & Gas Co.'s No. 1 Colette, SW SW Sec. 36, Blk. 31, University Sur. ..... Location.
Ben D. Simon & Cromwell's No. 1 Brookfield, C SE Sec. 23, Blk. 6, H. & T. C. Sur. ..... Rigging up.
Simms Oil & Atlantic O. P. Co.'s No. 1 University, NE SE Sec. 39, Blk. 30, University Sur. ..... Location.
The Texas Company's No. 10 H. M. King, NW Sec. 85, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Digging cellar.
The Texas Company's No. 11 H. M. King, Sec. 85, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Building rig.
The Texas Company's No. 12 H. M. King, Sec. 85, Blk. X, C. C. S. D. & R. G. N. G. Sur. ..... Moving in rig.
Texas Development Co.'s No. 1 Cowden. ..... Shut down 3,820 ft.
Tidal Oil Co.'s No. 2-B University, SW SE Sec. 34, Blk. 30, University Sur. ..... Location.
Tidal Oil Co.'s No. 2-C University, NW SE Sec. 34, Blk. 30, University Sur. ..... Location.
Zweifel and others' No. 1 Cowden. ..... Location.

CROCKETT COUNTY

Anchor Oil Co. (Cumberland) No. 1 Couch, C NE Sec. 18, Blk. QR, D. & S. E. T. T. R. R. Sur. ..... Drilling 2,000 ft.
Cranfill Brothers Oil Co.'s No. 1 Harris, C NE Sec. 4, Blk. 3, Washington County Sur. ..... Location.
Gulf Production Co.'s No. 1-D L. P. Powell, Sec. 62, Blk. BB, G. C. & S. F. Sur. ..... Drilling 1,710 ft.
Humble Oil & Refining Co.'s No. 11 Powell, Sec. 2, Blk. BB, N. A. Miller Sur. ..... Location.
Humble Oil & Refining Co.'s No. 1-B Powell, Sec. 63, Blk. BB, E. L. & R. Sur. ..... Drilling 680 ft.
J. K. Hughes' No. 2-A Powell, Sec. 2, Blk.

BR-2 G. C. & S. F. Sur. ..... Drilling 1,626 ft., top sand 1,150 ft.
J. K. Hughes' No. 3-A Powell, Sec. 2, Blk. BB-2 N. A. Miller Sur. ..... Drilling 2,125 ft.
J. K. Hughes' No. 2-B Powell, Sec. 63, E. L. & R. R. Sur. ..... Drilling 2,305 ft.
Magnolia Petroleum Co.'s No. 2 Shannon, SE SE Sec. 9, Blk. BB, E. L. R. R. Sur. ..... Rig on ground.
Marland Oil Co. and Wallace's No. 1 J. S. Pierce, C SE Sec. 150, Blk. O, G. H. & S. A. Sur. ..... Location.
Republic Production Co.'s No. 1 L. P. Powell, Sec. 62, Blk. BB, E. L. R. R. Sur. .....
William Shaffer and others' No. 1 University, C SE SE Sec. 9, Blk. 47, University Sur. ..... Total depth, 2,191 ft., shut down.
Ben Simon and others' No. 1 Shannon, C SW Sec. 10, Blk. YZ, E. L. R. R. Sur. ..... Drilling 2,645 ft.
J. D. Young & Cromwell's No. 1 Shannon, SE NE Sec. 4, Blk. 10 ..... Fishing 500 ft.
J. D. Young & Cromwell's No. 2 Shannon, SE SW Sec. 32, Blk. BB, University Sur. ..... Location.
H. F. Wilcox Oil & Gas Co.'s No. 1 University, C SE SE Sec. 20, Blk. 30, University Sur. ..... Drilling 4,565 ft.

CULBERSON COUNTY

James H. Gardner and others' No. 1 Radford, C SE Sec. 29, Blk. 62, Pub. Sch. Ld. Sur. ..... Rig on ground.
Plymouth Oil Co.'s (Big Lake) No. 1 Derrick, C W half Sec. 44, Blk. 45, Pub. Sch. Ld. Sur. ..... Shut down 350 ft. for casing.
Pure Oil Co.'s No. 1 Kloh & Rumsey ..... Spudding 100 ft.

ECTOR COUNTY

J. S. Cosden and others' No. 1-A G. W. Connell, C NW Sec. 13, Blk. B-16, Pub. Sch. Ld. Sur. ..... Top pay 3,465 ft., drilling 3,490 ft., 1,800 ft. oil in hole, est. 250,000 ft. gas.
J. S. Cosden and others' No. 1-B W. E. Connell, C NW Sec. 16, Blk. B-16, Pub. Sch. Ld. Sur. ..... Shut down 3,770 ft.
The Exploration Co.'s No. 1 Kloh & Rumsey, CEL SE Sec. 29, Blk. 45, Pub. Sch. Ld. Sur. ..... Drilling 3,730 ft.
The Exploration Co.'s No. 1 J. D. Slator, C SW Sec. 10, Blk. 45, T. & P. Twp. 1-S Sur. ..... Rigging up.
Llano Oil Co.'s No. 1 E. P. Cowden ..... Drilling 3,000 ft.
Sid Richardson's (Taliaferro) No. 1 Henderson, C SE Sec. 44, Blk. 43, T. & P. Twp. 3-S Sur. ..... Top salt 1,665 ft., drilling 2,950 ft.
Simms Oil Co.'s No. 1 W. P. Edwards, C SW Sec. 44, Blk. 43, T. & P. Twp. 3-S Sur. ..... Shut down 3,732 ft.
F. E. Skinner & Eastland's No. 1 J. W. Buchanan, C NW Sec. 20, Blk. 45, T. & P. Twp. 2-S Sur. ..... Plugging at 3,523 ft.

FISHER COUNTY

Ideal Oil Co.'s No. 1 W. F. Martin, NW NW Sec. 113, Blk. 1, T. & T. C. Sur. ..... Cleaning out 3,390 ft., waiting on 5-in. casing.
R. W. Raney's No. 1 Maberry, Sec. 56, T. & P. Sur. ..... Shut down 1,502 ft.

GAINES COUNTY

Hucony Oil Co.'s No. 1 Lindsey, C NE Sec. 17, Blk. C, School Land Sur. ..... Shut down 3,255 ft., contract comp.

GARZA COUNTY

Deep Rock Oil Co.'s No. 1 S. M. Swenson, C Sec. 26, Blk. 2, H. & G. N. Sur. ..... Drilling 3,425 ft.

GLASSCOCK COUNTY

Mascho & Marland Oil Co.'s No. 1 Calder, C NW Sec. 20, Blk. 32, T. & P. Twp. 4-S Sur. ..... Underreaming 8-in. 2,140 ft.
Plateau Oil Co.'s No. 1 L. S. Bell, C SW Sec. 11, Blk. 35, T. & P. Twp. 5-C Sur. ..... Drilling 1,050 ft.

HOWARD COUNTY

Humble Oil & Refining Co.'s No. 1 Douthitt, NW NW Sec. 123, Blk. 29, W. & N. W. Sur. ..... Drilling 600 ft.
Lockhart & Co.'s No. 1 Roberts, SW SW Sec. 97, Blk. 29, W. & N. W. Sur. ..... Underreaming 10-in. 710 ft.
Lockhart & Co.'s No. 1 Hyman (Scott), Sec. 86, Blk. 29, W. & N. W. Sur. ..... Shut down for 6-in. 1,995 ft.
Lockhart & Co.'s No. 1-A Otis Chalk, NE SE SW Sec. 95, Blk. 29, W. & N. W. Sur. ..... Underreaming 10-in. 1,050 ft.
Magnolia Petroleum Co.'s No. 1 Mary Chalk, NE NE Sec. 124, Blk. 29, W. & N. W. Sur. ..... Drilling 1,140 ft.
Magnolia Petroleum Co.'s No. 3 Otis Chalk, NE SW Sec. 114, Blk. 29, W. & N. W. Sur. ..... Drilling 1,190 ft.
Magnolia Petroleum Co.'s No. 3-A Otis Chalk, NE SW Sec. 114, Blk. 29, W. & N. W. Sur. ..... Standardizing 1,582 ft.
Marland Oil Co.'s No. 4 Otis Chalk, SE SE Sec. 113, Blk. 29, W. & N. W. Sur. ..... Running 8-in. 1,122 ft.
Reeves, Apperman and others' No. 1 H. R. Clay, NE SE SE Sec. 126, Blk. 29, W. & N. W. Sur. ..... Shut down 930 ft.

IRION COUNTY

Fayette-Tankersly's No. 1 Edwards, No. 2 A-1, 285 Sur. ..... Shut down 3,255 ft.

JEFF DAVIS COUNTY

Herbert Oil Co.'s No. 1 T. M. Wingo, C NW Sec. 20, Blk. G-25 ..... Shut down 3,012 ft.
Humble Oil & Ref. Co.'s No. 1 W. W. McCutcheon, Sec. 31, Blk. 244, G. C. & S. F. Sur. ..... Cleaning out 3,115 ft.
J. K. Hughes Dev. No. 1 J. Z. Means, M. Robertson-3 Sur. ..... Fishing 550 ft.

KENT COUNTY

The Texas Company's No. 1 Barron, C NW Sec. 131, Blk. G, W. & N. W. Sur. ..... Underreaming 5-in. 4,360 ft.

KIMBLE COUNTY

Dixie Oil Co.'s No. 1 Harrison, 900 ft. N NE 40 cor. S 300 ft., No. 80 Sur. ..... Drilling 1,150 ft.

LOVING COUNTY

Duffy Brothers & Arnold's No. 1 W. D. Johnson, C SW Sec. 20, Blk. 53, T. & P. Sur. ..... Location.

LYNN COUNTY

The Hart Oil Corp.'s No. 1 C. O. Edwards, NW NW Sec. 5, Blk. 2 ..... Shut down 1,400 ft.

MENARD COUNTY

J. R. Lewis and others' No. 1 White, C NW Sec. 8, J. Mabrey Sur. ..... Shut down 180 ft.

MITCHELL COUNTY

Teas & Stivers' No. 1 Pardee, SE SE Sec. 85, Blk. 97, H. & T. C. Sur. ..... Fishing casing 485 ft.
B. H. Cogdell's No. 1-C F. E. McKenzie, WL NW NE Sec. 226, Blk. 1-A, H. & T. C. Sur. ..... Shut down 125 ft.
Owen & Sloan's No. 1 C. P. Conoway, C NE Sec. 30, Blk. 28, Twp. 1-S Sur. ..... Drilling 2,975 ft.
Magnolia Petroleum Co.'s No. 2 Foster, NE NE Sec. 17, Blk. 29, T. & P. Sur. ..... Fishing 1,510 ft.
Magnolia Petroleum Co.'s No. 1 G. W. Womack ..... Fishing 3,106 ft.
Morrison & Thompson's No. 1 Griffith, SE SE Sec. 45, Blk. 29, T. & P. Sur. ..... Location.
Matree and others' No. 1 Jones, SE NW Sec. 311, Blk. 1, H. & G. N. Sur. ..... Location.
F. P. Zoch and others' No. 1 J. J. Ford, C SW Sec. 130, Blk. 3, H. & G. N. Sur. ..... Drilling 2,300 ft.

NOLAN COUNTY

Hucony Gas Co.'s No. 1 Arthur Sears, C N half SW Sec. 291, J. H. Stalcomb Sur. ..... Drilling 2,655 ft.

PECOS COUNTY

Benedum & Trees' No. 1 J. C. Trees, C Sec. 50, Blk. 8 ..... Sidereaming 450 ft.
Buell and others' No. 1 Hagan, C N half NE Sec. 89, Blk. OW, G. C. & S. F. Sur. ..... Fishing 575 ft.
Dixie Oil Co.'s No. 1 Herschenson, SE SE Sec. 8, Blk. 51, T. & P. Twp 10 Sur. ..... Drilling 5,346 ft.
Kemper Kimberlin's No. 1 Blackman, C NW Sec. 24, Blk. 3, H. & T. C. Sur. ..... Shut down 100 ft.
Mid-Kansas-Transcontinental's No. 1 Yates, 2,900 ft. W of SW cor. Sec. 60, Blk. 1, I. & G. N. Sur. ..... Rig.
Transcontinental Oil Co.'s No. 1 Perry, NE NE Sec. 5, Blk. Z, T. C. Sur. ..... Straightening hole 3,525 ft.
Southern Development Co.'s No. 1 R. G. Heiner, SE NW SE Sec. 589, Blk. 105, G. C. & S. F. Sur. ..... Temporarily abandoned.
Quinby Oil Co.'s No. 1 Townsite, Sec. 1, Blk. 267, Client Addition Sur. ..... Shut down 3,280 ft., show gas 3,260 ft.
Quinby Oil Co.'s No. 2 Bennett, C NW Sec. 592, Blk. 105, G. C. & S. F. Sur. ..... Temporarily abandoned 1,160 ft.

PRESIDIO COUNTY

Headlock & Miller's No. 1 Tootle estate, SE SW Sec. 123, Blk. 5, D. P. R. R. Sur. ..... Shut down 2,340 ft.

REAGAN COUNTY

California Co.'s No. 3 University, SE NW Sec. 14, Blk. 7, University Sur. ..... Rig, moving in tools.
H. D. Camp and others' No. 1 University, CWL NE NW Sec. 34, Blk. 11, University Sur. ..... Shut down 2,786 ft.
Cope-Hagan & Esch's No. 1 Moore, C NE Sec. 8, E. L. R. R. Sur. ..... Location.
Hiawatha Oil Co.'s No. 1 University ..... Location.
Marland-Texon Oil Co.'s No. 1 Sawyer, SE NE Sec. 154, Blk. 1, T. & P. Sur. ..... Drilling 2,390 ft.
Moody Oil Corp.'s No. 1 Sawyer, C Sec. 150, Blk. 1, T. & P. Sur. ..... Running 12-in. 685 ft.
Roxana Petroleum Corp.'s No. 1 Boyd, NE SW Sec. 15, Blk. F, University Sur. ..... Drilling 2,150 ft., top sand.
Ben Simon and others' No. 1 R. A. Walters, C SE Sec. 3, G. C. & S. F. Sur. ..... Dry and abandoned 3,110 ft.

REEVES COUNTY

Deep Rock Oil Co.'s No. 1 Caldwell ..... Location.
Schooler, Slack and others' No. 1 Abram, NE SE SE Sec. 31, Blk. 57, T. & P. Twp. 2 Sur. ..... Fishing 2,920 ft.
Grisham & Hunter's No. 1 State Land, C NW NW Sec. 23, Blk. 55, Pub. Sch. Ld. Sur. ..... Fishing 825 ft.
World Oil Co.'s No. 1 Biggs, C SE Sec. 65, Blk. 112, Pub. Sch. Ld. Sur. ..... Drilling 150 ft.

RUNNELS COUNTY

Red Bank Oil Co.'s No. 1 Fowler, CWL NW Sec. 514, J. H. Wills Sur. ..... Drilling 1,280 ft.
Frank Yaes' No. 1 R. M. McMillan ..... Location
F. P. Zoch and others' No. 1 Bruce ..... Location, drilling 1,420 ft.

SCHLEICHER COUNTY

Beavers & Leath and others' No. 1 J. A. and W. T. Whitten, C NW Sec. 35, Blk. 11, T. O. Sur. ..... Spudded and shut down.
Cope & Dalton's No. 1 Sol Meyer, C SW Sec. 99, Blk. 5, E. L. R. R. Sur ..... Shut down for 8-in. 1,925 ft.
S. G. Magee's No. 1 Robinson, SE NW Sec. 26, Blk. M, G. H. & S. A. Sur. ..... Rig.

SCURRY COUNTY

Northwest Co.'s No. 1 T. C. Stinson ..... Drilling 500 ft.

STERLING COUNTY

California Co.'s No. 1 Davis, SW NE Sec. 255, Blk. 2, H. & T. C. Sur. ..... Spudding.
Co-Operative Lease & Dev. Co.'s No. 1-A E. W. Douthitt, SW SE SE Sec. 173, Blk. 29, W. & N. W. Sur. ..... Drilling 3,190 ft.
The Exploration Co.'s No. 1 C. A. Boone, C NW Sec. 21, Blk. 11, S. P. Sur. ..... Shut down 2,700 ft.
H. D. Rummel's No. 2 Clark ..... Pulled big pipe, rigging up 1,175 ft.

STONEWALL COUNTY

Arkansas Fuel Co.'s No. 1 Craft ..... Drilling 4,416 ft.
Ward Syndicate's No. 1 J. A. Ward ..... Shut down 3,838 ft.

TERRELL COUNTY

Sun Oil Co.'s No. 1 Scott, C NE Sec. 12, Blk. R. T. C. Sur. ..... Drilling 1,020 ft.
E. T. Williams and others' No. 1 Robertson, C NE Sec. 71, Blk. D-10, T. C. Sur. ..... Drilling 2,650 ft.

TERRY COUNTY

Kingsland Oil & Potash Co.'s No. 1 Brownsfield ..... Rigging up.

TOM GREEN COUNTY

M. D. Bryant and others' No. 1 Lane Co. Sch. Ld., SE NW Sec. 13, Llano Co. Sch. Ld. Sur. ..... Underreaming 6⅝-in. 2,980 ft.
Texon Oil & Land-Marland's No. 2 Sorrell, C S half Sec. 265, Christian Mance Sur. ..... Drilling 825 ft.
World Oil Co.'s No. 1 Pulliam, NW SE SW Sec. 18, Blk. 4, H. & T. C. Sur. ..... Underreaming 6-in. at total depth 3,420 ft.

UPTON COUNTY

Amerada Pet. Corp.'s No. 1 Hughes, William Teer Sur. ..... Top sand 510, drilling 740 ft.
Atlantic Oil Prod. Co. and others' No. 1 Baker, SW SE Sec. 7, Blk. R, M. S. Denton Sur. ..... Location.
Atlantic Oil Prod. and others' No. 1 Sherk, NE cor. SW Sec. 35, Blk. 1, M-K-T Sur. ..... Building rig.
Dixie Oil Co.'s No. 2 Burleson, Sec. 100, T. C. Jones Sur. ..... Rigging up.
Dixie Oil Co.'s No. 10 Burleson, Sec. 100, T. C. Jones Sur. ..... Rigging up.
Dixie Oil Co.'s No. 8 Burleson, Sec. 2, John Nidever Sur. ..... Plugging off sulphur water 2,270 ft. to deepen.
Dixie Oil Co.'s No. 6 Hughes, Sec. 4, William Teer Sur. ..... Top pay 2,040 ft., drilling 2,175 ft., hole full oil.
Dixie Oil Co.'s No. 7 Hughes, Sec. 4, William Teer Sur. ..... Drilling 2,030 ft.
Dixie Oil Co.'s No. 8 Hughes, Sec. 4, William Teer Sur. ..... Rigging up.
Dixie Oil Co.'s No. 9 Hughes, Sec. 4, William Teer Sur. ..... Rigging up.
Dixie Oil Co.'s No. 10 Hughes, Sec. 4, William Teer Sur. ..... Rigging up.
Dunning and others' No. 1 McElroy, C NE Sec. 155, Blk. E, C. C. S. D. & R. G. N. G. Sur. ..... Location.
Dunning and others' No. 2 McElroy, C NW Sec. 134, Blk. E, C. C. S. D. & R. G. N. G. Sur. Location.
Gulf Production Co.'s No. 1 Hughes, Sec. 4, William Teer Sur. .....
Gulf Production Co.'s No. 1 J. H. Shirk-D, SE NE Sec. 5, Blk. 3, M-K-T Sur. .....
Gulf Production Co.'s No. 1 J. H. Sherk-E, SW cor. NE Sec. 35, Blk. 1, M-K-T Sur. ..... Building rig.
Gulf Production Co.'s No. 1 Sanger, CNL Sec. 14, Blk. 3, M-K-T Sur. ..... Fishing tools 3,315 ft. Hole full of water.
Hults and others' No. 1 Giddings, C NW Sub. Sec. 12, Wash County R. R. Sur. ..... Rig.
Humble Oil & Refining Co.'s No. 4 A. S. Burleson, Sec. 100, T. C. Jones Sur. ..... Pay 2,160-85 ft., swabbing 25 bbls.
Humble Oil & Refining Co.'s No. 5 A. S. Burleson, NW NW Sec. 100, T. C. Jones Sur. ..... Moving in tools.
Humble Oil & Refining Co.'s No. 1 McElroy, SW SW Sec. 20, Blk. 42, T. & P. Twp. 5-S Sur. ..... Drilling 3,580 ft.
Independent Oil & Gas Co.'s No. 3 A. S. Burleson, SE cor. Tr. 100, T. C. Jones Sur. ..... Shut down, pay 2,200-15 ft.
Independent Oil & Gas Co.'s No. 4 A. S. Burleson, E of No. 1, Sec. 100, T. C. Jones Sur. ..... Top sand 610 ft., drilling 1,180 ft.
Independent Oil & Gas Co.'s No. 5 A. S. Burleson, Sec. 100, T. C. Jones Sur. ..... Rig.
Independent Oil & Gas Co.'s No. 3 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Shut down for orders 2,010 ft.
Independent Oil & Gas Co.'s No. 4 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Shut down 1,966 ft.
Independent Oil & Gas Co.'s No. 5 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Rig.
Independent Oil & Gas Co.'s No. 6 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Location.
Independent Oil & Gas Co.'s No. 7 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Location.
Independent Oil & Gas Co.'s No. 8 Emma Wooley, Blk. 3, G. C. & S. F. Sur. ..... Rig.
Kirkwood and others' No. 1 Rankin, Sec. 100, T. C. Jones Sur. ..... Total depth 3,950 ft., shot 175 quarts 3,820-3,930 ft., no results, dry and abandoned.
McMan Oil & Gas Co.'s No. 2 M. L. Baker, Sec. 7, E. C. Grooms Sur. ..... Rig.
Marland Oil Co.'s No. 1 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Top sand 628 ft., drilling 1,075 ft.
Marland Oil Co.'s No. 2 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Top sand 610 ft., drilling 930 ft.
Marland Oil Co.'s No. 3 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Top sand 610 ft., drilling 1,130 ft.
Marland Oil Co.'s No. 4 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Top sand 615 ft., drilling 1,175 ft.
Marland Oil Co.'s No. 5 Estep, Sec. 18, Blk. 3,

M-K-T Sur. ..... Top sand 550 ft., drilling 760 ft.
Marland Oil Co.'s No. 6 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Spudding.
Marland Oil Co.'s No. 7 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Drilling 330 ft.
Marland Oil Co.'s No. 8 Estep, Sec. 18, Blk. 3, M-K-T Sur. ..... Rig.
Marland Oil Co.'s No. 1 Shirley, SW SW Sec. 10, Blk. 3½, C. C. S. D. & R. G. N. G. Sur. ... Building rig.
Marland Oil Co.'s No. 1 Gibbs, C SE Sec. 93, Blk. Y, C. C. S. D. & R. G. N. G. Sur. ..... Pay 2,298-2,333 ft., 500 ft. oil in hole. Flowed sulphur water 2,333 ft., plugged back.
Marland Oil Co.'s No. 1 Powell ..... Building rig.
Marland Oil Co.'s No. 1 Reese ..... Location.
Marland Oil Co.'s No. 1 University, C SW Sec. 21, Blk. 4, University Sur. ..... Location.
Marland Oil Co. & Texon's No. 1 Halff, C SE Sec. 62, Blk. Y, C. C. S. D. & R. G. N. G. Sur. ..... Top sand 1,440 ft., drilling 1,600 ft.
Pure Oil Co.'s No. 1 Sherk ..... Location.
Roxana Petroleum Corp.'s No. 2 Hughes, Sec. 4, William Teer Sur. ..... Rigging up.
Roxana Petroleum Corp.'s No. 3 Hughes, Sec. 4, William Teer Sur. ..... Building rig.
Roxana Petroleum Corp.'s No. 2 Estep, SE cor. SW Sec. 18, Blk. 3, M-K-T Sur. ..... Spudding 200 ft.
Roxana Petroleum Corp.'s No. 3 Estep, C NE SE SE, Sec. 18, Blk. 3, M-K-T Sur. ..... Building rig.
Sartain & Davis' No. 1 Bull, SW NE, Sec. 48, Blk. 41, T. & P. Sur. ..... Shut down 1,660 ft.
Skelly Oil Co.'s No. 1 Jones ..... Drilling 3,050 ft.
The Texas Company's No. 8 R. King, SE SW Sec. 11, Blk. 3½, C. C. S. D. & R. G. N. G. Sur. ..... Drilling 2,085 ft., 1,000 ft. oil in hole, top pay 2,004 ft.
The Texas Company's No. 9 R. King, Sec. 11, Blk. 3½, C. C. S. D. & R. G. N. G. Sur. ..... Drilling 2,095 ft., top pay 2,010 ft. swabbing 23 bbls.
The Texas Company's No. 1 A. S. Burleson, Sec. 100, T. C. Jones Sur. ..... Pay 2,154-89 ft., shot 60 quarts 2,157-87 ft., swabbing 90 bbls.
The Texas Company's No. 3 A. S. Burleson, Sec. 100, T. C. Jones Sur. ..... Drilling 1,815 ft.
The Texas Company's No. 4 A. S. Burleson, Sec. 100, T. C. Jones Sur. ..... Drilling 2,185 ft., top pay 2,170 ft., 1,000 ft. oil in hole.
Texas Pacific Coal & Oil Co.'s No. 3 Sherk, Sec. 5, Blk. 3, M-K-T Sur. ..... Rig.
Texas Pacific Coal & Oil Co.'s No. 4 Sherk, NW SE Sec. 5, Blk. 3, M-K-T Sur. ..... Drilling 1,045 ft., top sand 540 ft.
Johnston & McCamey & Union Land Co.'s No. 1 Union Land Co., SW cor. Sec. 21, Blk. 1, M-K-T Sur. ..... Location.
Wentz Oil Corp.'s (was Johnson & McCamey) No. 1 Sherk, NW SE Sec. 35, Blk. 1, M-K-T Sur. ..... Flowed 680 bbls. oil and same amount of water; pulling 5-in. to set packer.

VAL VERDE COUNTY

A. Blume and others' No. 1 Moore estate, Sec. 183, J. Mitchell Sur. ..... Shut down 2,675 ft.
Curso Williams' No. 1 Holman, NE NE Sec. 5, Blk. N, G. H. & S. A. Sur. ..... Drilling 200 ft.
East Del Rio Oil Co.'s No. 1 Russell, E cor. Sec. 183, Del Rio Town Sur. ..... Shut down 2,954 ft.
Hiawatha Oil Co.'s No. 1 Sellers, C Sec. 1,031, Blk. A, I. & G. N. Sur. ..... Rigging up.
Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I. & G. N. Sur. ..... Shut down 3,712 ft.
O. O. Owens' No. 1 Mills, CE Sec. 128, I. & G. N. Sur. ..... Location.
Plateau Oil Co.'s No. 1 Harrison, Sec. 14, Blk. 3 ..... Shut down 3,158 ft.
Transcontinental Oil Co.'s No. 1 W. S. Stevenson, NE SE NE Sec. 8, Blk. 4, I. & G. N. Sur. ..... Drilling 1,540 ft.

WINKLER COUNTY

Brandon & McCamey's No. 1 Kloh & Rumsey, NE SW SW Sec. 11, Blk. 46, T. & P. T-1-N Sur. ..... Drilling 3,450 ft.
McCullough Oil Co.'s No. 1 Tobe Morton, CEL Sec. 20, Blk. B-12, Pub. Sch. Ld. Sur. ..... Location.
Independent Oil & Gas Co.'s No. 1 Hendricks, SW SE SE Sec. 42, Blk. B-5, Pub. Sch. Ld. Sur. ..... Location.
R. S. Matthews and others' No. 1 State, C Sec. 7, Blk. A-57, Pub. Sch. Ld. Sur. ..... Setting 20-in. 200 ft.
F. P. Zoch and others' No. 1 John Sealy, C SW Sec. 73, Blk. A, Pub. Sch. Ld. Sur. ..... Shut down 200 ft.
L. D. Ladd, Hill and others' No. 1 Amburgey, C Sec. 24, Blk. B-7, Pub. Sch. Ld. Sur. ..... Fishing 632 ft.
Sid Richardson's (Tallaferro) No. 1 Sealy, C SW Sec. 28, Blk. A ..... Drilling 2,950 ft.
Llano Oil Co.'s No. 1 Scarborough, C Sec. 1, Blk. C-22, Pub. Sch. Ld. Sur. ..... Location.
Westbrook & Eastland Oil Co.'s No. 1 Hendricks, SE SE Sec. 42, Blk. B-5, Pub. Sch. Ld. Sur. ..... Drilling 2,744 ft., 1,000,000 ft. gas 2,738 ft.
Champlin Drilling Co.'s No. 1 Means, C SW Sec. 21, Blk. C-23, Pub. Sch. Ld. Sur. ..... Location.

WILDCAT OPERATIONS IN PANHANDLE

(Continued from Page 40)

Blk. 2-M ..... Spudded and shut down.
Young and others' No. 1-A Holmes, Sec. 106, Blk. 3 ..... Completed.

HANSFORD COUNTY

F. W. Dillard and others' No. 1 F. A. Davis, Sec. 50, Blk. 2 ..... Spudded and shut down.
Oklavania Oil Co.'s No. 1 Whitson ..... Shut down 1,045 ft.

HARTLEY COUNTY

Amerada Pet. Corp.'s No. 1 Frances Farwell, Sec. 27, Block 16 ..... Cellar.
Deep Rock Oil Co.'s No. 1 Lyman & Balfour, Sec. 9, Blk. 2 ..... Shut down 1,710 ft.
Dorning and others' No. 1 A. C. Ashby ..... Location abandoned.
Eslick and others' No. 1 J. B. Irving, Sec. 13, Blk. 13 ..... Shut down 1,500 ft.
W. W. Holmes' No. 1 G. Coots, Sec. 58, Blk. XR ..... Drilling 880 ft.
Humble O. & R. Co.'s No. 1 J. M. Shelton, Sec. 63 ..... Drilling 1,610 ft.
J. B. McKanna's No. 1 E. S. Collins, Sec. 3, Blk. LS ..... Drilling 190 ft.
J. B. McKanna's No. 1 Frances Farwell, Sec. 10, Blk. 22 ..... Drilling 175 ft.
J. B. McKanna's No. 1 J. M. Shelton Est., Sec. 29, Blk. 202 ..... Drilling 1,990 ft.
Kork Oil Co.'s No. 1 J. M. Shelton Est., Sec. 1, Blk. 8-B ..... Spudded and shut down.
Breck Walker's No. 1 Stone, Sec. 35, Blk. ITO ..... Location.

HEMPHILL COUNTY

Andrade and others' No. 1 Humbolt, Sec. 44, Blk. 1 ..... Location.
Dorning and others' No. 1 Alexander, Pottevent ..... Spudded and shut down.
Hoover and others' No. 1 Schaller Est., Sec. 4 ..... Spudded and shut down.
Hoover and others' No. 1 fee, J. S. Hood ..... Drilling 1,800 ft.
Mitchell and others' No. 1 J. E. George, Sec. 40, Blk. 2-A ..... Shut down 900 ft.
McCockrel and others' No. 1 Shaller Est., J. Fanning ..... Building rig.

HUTCHINSON COUNTY

Big Creek Oil Co.'s No. 1 Cal Merchants, Sec. 37, Blk. 47 ..... Drilling 2,610 ft.
Get Oil Co.'s No. 1 W. P. Allen ..... Spudded and shut down.
Gibson Oil Corp.'s No. 1 McCormick Est., Sec. 18, Blk. M-23 ..... Shot 80 qts., 3,140-60 ft., total depth 3,166 ft, will deepen.
Lee Flowers' No. 1 Carver, William Heath Sur. ..... Shut down 1,200 ft.
Pole Cat Oil Co.'s No. 1 W. B. Haile ..... Rig.
Pamfield Oil Co.'s No. 1 Lugibhyl Bros. ..... Drilling 620 ft.
Rock Island Oil Co.'s No. 1 W. A. Starnes ..... Shut down 465 ft.
Sinclair Oil Co.'s No. 1 Williams, Sec. 43, Blk. 47 ..... Drilling 2,405 ft.
Tex-O Oil Co.'s No. 1 Johnson Bros., Tomlinson Sur. ..... Underreaming 5-in. at 2,905 ft.
Wentz Oil Corp.'s No. 1 Cal Merchant, Sec. 34, Blk. 47 ..... Shut down for 5-in. at 2,757 ft.
Western Dev. Co.'s No. 1 O. W. Jarvis ..... Fishing 3,485 ft.

LAMB COUNTY

E. C. Marrs and others' No. 1 Yellowhouse ..... Drilling 2,000 ft.

LIPSCOMB COUNTY

Everett and others' No. 1 Mrs. H. D. May ..... Rig on ground.
Snyder and others' No. 1 A. Barton ..... Drilling 3,000 ft.

MOORE COUNTY

Amarillo Oil Co.'s No. 1 Masterson-J, Sec. 59, Blk. O-18 ..... Shut down 1,365 ft.
Amarillo Oil Co.'s No. 2 Terry Thompson, Sec. 19, Blk. 44 ..... Cemented 10-in. at 1,450 ft.
Cadman and others' No. 1 J. T. Sneed, Jr., Sec. 68, Blk. 3 ..... Small show gas, drilling 2,526 ft.
Douglas Oil Co.'s No. 1 H. W. Beauchamp, Sec. 112, Blk. 44 ..... Shut down 700 ft.
Flowers and Marland Oil Co.'s No. 1 J. T. Sneed, Jr., Sec. 25, Blk. 1 ..... Drilling 2,515 ft., 6,000,000 gas
Humble O. & R. Co.'s No. 1 Kilgore, Sec. 28, Blk. 44 ..... Drilling 1,300 ft.
Phillips Pet. Co.'s No. 1 Sneed, N. Jones ..... Shut down 3,095 ft., total depth
Masters Oil Co.'s No. 1 J. T. Sneed, Jr., Sec. 58, Blk. 5-T ..... Shut down 385 ft.
Morton & Co.'s No. 1-H Rubert, Sec. 191, Blk. 3-T ..... Shut down 860 ft.
Prairie O. & G. Co.'s No. 2 Sneed, Sec. 26, Blk. 6-T ..... Running 8-in. at 2,935 ft.
Moore County Oil's No. 1 Sneed, Sec. 30, Blk. 6-T ..... Fishing at 1,010 ft.
Shadler Bros.'s No. 1 John Lowery, Sec. 237, Blk. 44 ..... Rig.
Shamrock Pet. Co.'s No. 1 O. E. Cober, Sec. 16, Blk. M-21 ..... Shut down 750 ft.

OCHILTREE COUNTY

W. G. Burton's No. 1 Stickler, Sec. 579, Blk. 43 ..... Drilling 2,890 ft.
Hamilton and others' No. 1 R. E. Wamble, Sec. 144, Blk. 43 ..... Shut down 250 ft.
McCorkle Pipe Line Co.'s No. 1 R. H. Moore, Sec. 471, Blk. 43 ..... Running 10-in. at 1,584 ft.
Standard Dev. Co.'s No. 1 Bowden, Sec. 923, Blk. 43 ..... Shut down 900 ft.

POTTER COUNTY

Amarillo Oil Co.'s No. 5 Lee Bivins-A, Sec. 25, Blk. O-18 ..... Drilling 2,510 ft.
Amarillo Oil Co.'s No. 1 Fuqua, Sec. 4 ..... Running 15-in. at 1,140 ft.
The California Co.'s No. 1 G. A. Carey, Sec. 6, Blk. Z-6 ..... Rig.
Gulf Prod. Co.'s No. 1 W. H. Bush, Sec. 89, Blk. 9 ..... Shut down 150 ft.
Farmer O. & G. Co.'s No. 1 J. A. Jones ..... Shut down 150 ft.
Kelley & Harris' No. 1 Bush, Sec. 161, Blk. 9 ..... Location.

ROBERTS COUNTY

Gibson Oil Corp.'s No. 1 T. S. Jones, Sec. 109, Blk. C ..... Spudded and shut down.
Charles Page and others' No. 1 Hamilton Tract 2, Clay County School Land ..... Drilling 1,000 ft.
Murphy and others' No. 1 A. W. Gill, Sec. 31, Blk. 2-M ..... Spudded and shut down.
Pan-State Oil Co.'s No. 1 A. H. Tandy, Section 179, Blk. 42 ..... Rig.
Pettijohn and others' No. 1 J. A. Meade, Sec. 29, Blk. 1-B ..... Spudded, shut down for water.
Trammel and others' No. 1 A. H. Tandy, School Land ..... Spudded, shut down for water.

SANFORD COUNTY

F. W. Dillard and others' No. 1 Davis .....

SHERMAN COUNTY

Eclipse Drilling Co.'s No. 1 Lee Bivins, Sec. 35, Blk. 2 ..... Rig up.
Get Oil Co.'s No. 1 Bivins, Sec. 35, Blk. 3-B ..... Shut down 210 ft.
Phillips Pet. & Savoy, No. 1 Roach, Sec. 161, Blk. 1-C ..... Drilling 1,650 ft.

SWISHER COUNTY

Overson & Keagan, No. 1 L. M. Woodward ..... Shut down 840 ft.

WHEELER COUNTY

American Ref. Co.'s No. 1 E. E. Carlton, Sec. 29, Blk. 13 ..... Location.
Boyles & Johnson's No. 1 S. L. Lewis ..... Rig.
Gibson Oil Corp.'s No. 1 W. E. Bentley, Sec. 42, Blk. 24 ..... Shut down 2,265 ft., 30,000,000 gas
Gibson Oil Co.'s No. 2 H. C. Phillips, Sec. 41, Blk. 24 ..... Rig.
Gibson Oil Corp.'s No. 4 H. C. Phillips, Sec. 41, Blk. 24 ..... Drilling 1,500 ft.
Hill, Cook & Riley's No. 1 L. H. Webb, Sec. 61, Blk. 24 ..... Spudded, 250 ft.
Laycock and others' No. 1 Fee, Sec. 10, Blk. 27 ..... Shut down 1,700 ft.
Mid-Kansas O. & G. Co.'s No. 1 W. C. Company, Sec. 12, Blk. 27 ..... Completed.
Murchison & Fain's No. 1 Binkley & Cain, Sec. 55, Blk. 24 ..... Completed.
Murchison & Fain's No. 1 Binkley & Cain-A, Sec. 37, Blk. 24 ..... Building rig.
J. J. Rook Co.'s No. 1 T. C. Jones, Sec. 1, Blk. 24 ..... Shut down 1,300 ft.
Scott, Allen & Bledsoe's No. 1 J. H. Jackson, Sec. 11, Blk. 27 ..... Shut down 1,500 ft.
Smith and others' No. 1 W. J. Johnson, Sec. 88, Blk. 5-A ..... Rig.
Smith, Brady and others' No. 1 P. J. Sorenson, Sec. 53, Blk. 4-A ..... Shut down 312 ft.
The Texas Company's No. 1 Smith (Lewis), Sec. 40, Blk. 24 ..... Drilling 1,500 ft.
Upham Gas Co.'s No. 1 Cody, Sec. 88, Blk. 17 ..... Spudded and shut down.
Upham Gas Co.'s No. 1 Martin, Sec. 89, Blk. 17 ..... Spudded and shut down.
Upham Gas Co.'s No. 1 Alexander, Sec. 92, Blk. 17 ..... Fishing up tools.
Upham Gas Co.'s No. 1 Griswald, Sec. 1, Blk. 24 ..... Rig.
E. L. Woodley, Jr.'s No. 1 Woodley, Sr., Section 13, Blk 5-A ..... Drilling 2,000 ft.
Vaughn and others' No. 1 O'Gorman, Sec. 83, Blk. 17 ..... Drilling 1,900 ft.
World Oil Co.'s No. 1 Jackson, Sec. 11, Blk. 27 ..... Rig.

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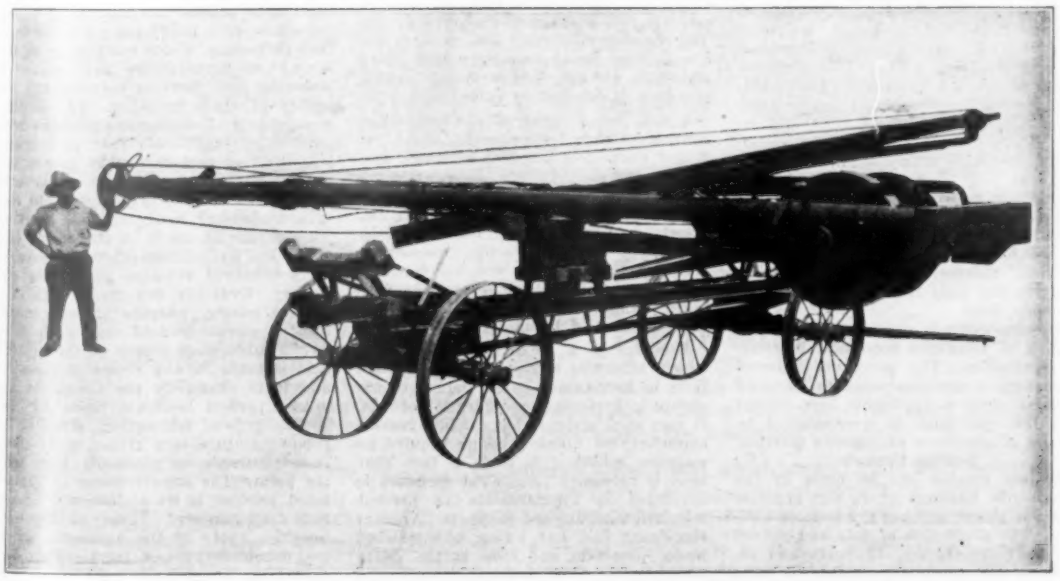

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Say you saw it in The Oil and Gas Journal

Processes in Manufacturing Grease

Research Has Accomplished a Great Deal in Development of Methods and Use of New Materials

By James McKee*
Superintendent, Sun Oil Co.'s Grease Plant at Marcus Hook, Pa.

Lubricating grease has come to occupy a very prominent place in industry. Two important elements in the formation of lubricating greases are fat and petroleum oil. To make a stiff product an alkaline body has to be utilized. The alkalines ordinarily used are sodium and calcium. These are used to change the fats into soaps.

The sodium soaps are produced when tallow or a fatty oil is heated with a solution of sodium hydroxide. The reaction is termed saponification. Calcium soaps are prepared by adding a solution of lime, in place of sodium hydroxide. Petroleum oil selected for combining with these two soaps is generally an oil distilled from crude petroleum, one that has been refined for lubrication. When this refined petroleum has been blended properly with these specially prepared soaps, the finished product is designated lubricating grease. Some 65 years ago, history informs me, a man by the name of Raecz was the first to formulate the idea of making grease by dissolving soap in mineral oil.

Before describing present manufacturing procedure in making grease, it will be interesting to review some facts respecting old methods of production as well as quality of ingredients used. Axle or cart grease is about as old an item in this line as we can select. This was put together in the following manner. Anthracene and rosin oils were mixed and heated to 100/150 degrees Fahrenheit in a kettle, then poured into a bucket, and to this was added a milk solution of calcium oxide. This was stirred with a wooden instrument until the mixture began to thicken; then it was poured immediately into containers and allowed to set before removal. Frequently this grease was adulterated by additions of terra alba, talc, chalk, plumbago, and an over generous supply of water. It is well, however, to understand that these inert substances were not lubricants. Where imperfect bearings were installed, they acted as abrasives for grinding uneven surfaces and filling up minute grooves.

Today's Process

Today axle grease is manufactured from refined pale and black oils with additions of true fats and the purest of hydrated lime. The method employed is closely allied to the manufacture of modern greases, thus warranting the absence of the fictitious body and adulterants present in the old method. Instead of using a bucket in manufacture, the whole transaction is carried out in one kettle with steam jacket containing a mechanical mixer.

Locomotive greases are also made in a similar crude manner. Its composition included palm and paraffin oils with an alkaline solution composed of soda ash. The two greases named are by no means the only poorly made greases produced a decade ago, as variety was in evidence then, too.

The use of impure materials is foreign to the manufacturer whose aim is to produce an article that will hold and gain customers. No reputable grease maker will attempt to use paraffin, cerecine, montan, and Japan waxes to stiffen animal fats or vegetable oils for lubricating purposes, yet a few years ago rarely any exception would have been taken to the addition of these.

When motor driven vehicles arrived, it became necessary to provide suitable lubricants. These were made from a variety of materials, unified with such ingredients as were deemed best suited for lubricating the different mechanical parts of the machine.

Solid lubricants are especially valuable for lubricating certain bearings where liquid lubricants will not adhere. Trade names are applied to describe the purpose for which they are employed, but few volunteer description or give composition of materials used in the manufacture.

Method of Operation

The modus operandi in manufacture is to have a jacketed kettle constructed containing a mechanical mixer driven by motive power. The quantity of fat is pumped or dumped into the kettle; heat is applied, and the mixer started. Calcium oxide is added carefully in solution form to turn the fat into an insoluble soap. This method requires about five hours to complete saponification of the fat. Steam is turned off and the volume of refined oil added depends on the density of grease desired. Some grease contains a high and others a low percentage of soap, according to the mechanism required to be lubricated. This finished, the grease is filled into marketable containers. The whole operation requires eight hours. When operations have been completed the grease should have a smooth oily appearance. The melting point will range according to density from 175 degrees to 220 degrees Fahrenheit.

To make what is termed a No. 1 cup grease, 9 parts fat and 100 parts refined oil are required; No. 2, 12 parts fat and 100 parts refined oil; No. 3, 15 parts fat and 100 parts refined oil; No. 4, 18 parts fat and 100 parts refined oil. The necessary quantity of calcium oxide has to be added to saponify the grade of fat used. There are thinner as well as stiffer greases made, but those I have specified are in greatest demand.

In describing the making of calcium soaps, I do not wish to convey that this is the only method employed in making insoluble greases. I will just name a few others:

A hard soap is dissolved in water and calcium chloride in solution is added until the soap separates in a complete form of insoluble curds. This material then is washed thoroughly and dried. These operations finished, it is dissolved in paraffin oil to make a lime grease. This is the best method that can be employed to obtain entire saponification of fats used.

Magnesia soap has a close resemblance to lime soap and is used for solidifying oils. Similar operation is adopted as described for lime. Instead of calcium chloride, magnesium sulphate solution converts the soap from a soluble to an insoluble form.

Alumina soap is gaining favor in the making of solid and semi-solid lubricating specialties. The procedure followed in converting the soda soaps to lime and magnesia also is applicable here, except that the conversion is accomplished by the use of aluminum sulphate in solution.

Sodium Greases

Sodium greases can be made in the same kettle, although where high-pressure steam is absent an open fire is more suitable. The proportion of fats and refined oils are: No. 1, fat, 12 parts and refined oil 100 parts; No. 2, fat, 15 parts and refined oil 100 parts; No. 3, fat 18 parts and refined oil 100 parts; No. 4, fat, 21 parts, refined oil 100 parts. To saponify the fats, a solution of sodium hydroxide is added and heat applied. These are termed fiber or sponge greases when tallow is the fat basis. They are not smooth when finished, but possess as high a melting point as 300 degrees Fahrenheit. This method of manufacture is more varied than for the calcium class. Some grease makers saponify the fat separately; others complete the operation with entire oil in fat. I may state here, numerous specialties are manufactured under the name of sodium greases. Most of the transmission greases, sometimes named gear compounds, are made by this method. Some are finished smooth, others are spongy, nevertheless the demand is extensive for both products. Selection of fats and oils always is important, but particularly so in this class of grease.

The same saponifying agent is used in making numerous grades of railroad, hot and cold neck greases, etc.

It is common knowledge that almost every manufacturer of grease lays claim to a secret process. So far as I am aware, all producers in this line stand at least on one common ground, that is, none can market a grease without a soluble or an insoluble soap having been dissolved in lubricating oil.

It may be asked rightly where need arises for two leading saponifying agents in making a grease base. Here is the answer: For lubricating bearings which do not come in contact with water, invariably a grease made from a sodium soap base is used; whereas bearings that come in contact with water or steam, a calcium soap base grease should be utilized every time. The latter does not blend with water so readily as the former.

Research Results

The word "research" brings us close to familiar language. Somehow, its familiarity reminds us something new has been found, or acquired, or is in process of development. Intensity in effort invariably gets results. It is something novel to apply this nomenclature to lubricating grease. My purpose is to acknowledge here that there is such a field of research and to state definitely some results accomplished in the realm of lubricating grease. Construction of plants has been modernized, and old types of structures remodeled. Radical changes made in production methods and formula. The research laboratory has, through the adoption of new construction and purer materials, elevated grease to the highest standard of lubricating value.

I will define some of the important changes. Calcium cup grease, which required about five hours to saponify, can be accomplished in one hour. Sodium calcium greases, which were made in open kettles, are being made in stills. Rarely a hand touches the materials. Mechanism fills the stills, mechanism moves the grease to coolers, and mechanism pumps the finished grease into containers, thus eliminating the former tremendous cost of handling.

Pressure is a recent development, which, according to results obtained, likely is to be retained as an important assistant in hastening saponification of fats. It may seem strange that calcium greases manufactured under pressure require no moisture added, yet, it is a fact that none is necessary. Sufficient moisture is developed in saponification to prevent separation of finished products. Another significant fact has been accomplished under pressure, and that is the gritty particles of calcium oxide practically have been destroyed. The superiority of this method over the old is noted particularly in appearance. The texture is finer, smoothness is an inherent quality, and the product also possesses that distinctive translucency indicative of highest quality. The elimination of excess moisture and destruction of calcium grit enhance lubrication value of insoluble grease. The finished material retaining a consistency equal to the composition in which regular quantities of material have been used. Almost every fat used in the production of grease can be so treated. This is where the formula making engineer and chemist are going to differ with the grease maker. They seldom give him much consideration anyhow. Tell me who knows more about fats and their varied caprices than he?

High Melting Point

Yet, there is another important item which has not obtained the publicity it deserves. High melting point lubricants have come to stay. Recent research has proved a lubricating grease can be obtained with a melting point as high as 600 degrees Fahrenheit. Its efficiencey has been demonstrated fully on bearings where temperatures of 500 and 600 degrees Fahrenheit prevailed.

Again I am indebted to research for disclosing a use for petroleum acid, rightly designated by the "chemist" as "naphthene acids." Valuable time, as well as considerable expense, was entailed in its development. Students of lubrication admit the superior lubricating value of this acid. It can and now is being utilized in various fields of lubrication, but what we are interested in particularly is its application to lubricating grease. In my way of thinking this is the field in which it shines with the greatest luster. Not only is it suited to produce a perfect lubricant alone in conjunction with regular refined oils, but its inherent lubricating qualities permit its blending with other fats for making any grade of grease desired. The actual lubricating value of this acid as an important constituent of grease is impossible of over estimation. Engineers have measured its worth and recommended its use, and chemists have proved its purity and uniformity. The consumer admits it is the most perfect and economical lubricant obtainable.

Special apparatus is required for production of grease where a petroleum acid is used. A plant which is nearest to a continuous process has been in operation for some years producing grease from thin petroleum. From start to finish the work of manufacture goes along so smoothly that there is scarcely any necessity of close watching. The cooking apparatus and cooling system have been planned so ingeniously that each operative division performs what is required so accurately that the grease seldom is seen until its is being pumped into containers finished ready for the market. This grease is made in the usual consistencies, but, unlike other cup greases, its consistency remains practically stationary. Ordinary cup grease gets thinner by mixing, whereas grease containing the petroleum acid retains its density. Transmission grease containing this acid is made in any consistency desired and it is absolutely the smoothest and most perfect lubricant made for this specific type of lubrication. Another important feature is a grease made therefrom possesses an unusually high melting point. The attractiveness of the finished product is its smoothness, oiliness and transparency. These distinguished qualities apply to the numerous soluble and insoluble greases marketed today containing "naphthenic acid."

In the last 10 years, the research laboratory has accomplished a great deal in the development of lubricating grease. A goodly number of important changes in the manufacture and use of new materials are known to be in view. In fact, I may sum up the whole status of grease research by declaring in the language of common parlance, "The half has not been told."

*Read before American Chemical Society meeting in Philadelphia.

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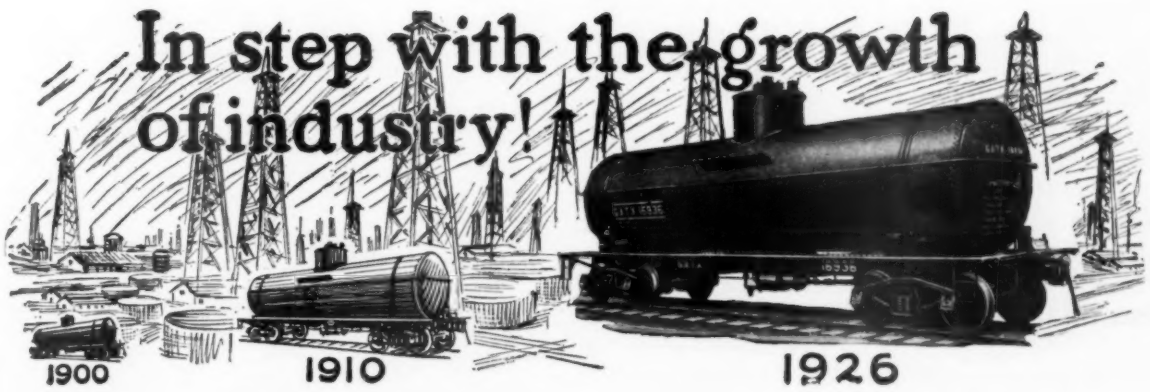

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PETROLEUM STATISTICS FOR AUGUST, 1926

ANALYSIS OF PETROLEUM SUPPLY AND DEMAND

(Barrels of 42 U. S. gallons.)

	June, 1926*	July, 1926*	Aug., 1926	Aug., 1925
SUPPLY:				
Domestic crude production:				
Light	51,065,000	53,072,000	54,159,000	52,198,000
Heavy	10,677,000	11,821,000	12,366,000	15,382,000
Imports:				
Crude	5,571,000	5,185,000	5,232,000	4,945,000
Refined	2,344,000	1,992,000	2,360,000	1,292,000
Total supply all oils	69,657,000	72,070,000	74,217,000	72,917,000
Daily average	2,322,000	2,325,000	2,394,000	2,352,000
Change in stocks all oil	†4,262,000	†2,810,000	†6,362,000	†409,000
DEMAND:				
Total demand	73,919,000	75,880,000	80,579,000	73,326,000
Daily average	2,463,000	2,448,000	2,599,000	2,365,000
Exports‡:				
Crude	1,225,000	1,726,000	1,083,000	1,465,000
Refined	9,939,000	8,738,000	10,696,000	8,428,000
Domestic demand	62,755,000	65,416,000	68,800,000	63,432,000
Daily average	2,092,000	2,110,000	2,219,000	2,046,000
Excess of daily average domestic production over domestic demand	$34,000	$17,000	$73,000	134,000
STOCKS (end of month):				
Crude:				
East of California (x):				
Light	222,092,000	221,013,000	219,406,000	
Heavy	59,240,000	57,171,000	57,042,000	303,291,000
California:				
Light	35,405,000	33,583,000	32,124,000	41,566,000
Heavy (z)	87,389,000	87,761,000	87,769,000	78,507,000
Total crude	404,226,000	399,528,000	396,341,000	423,364,000
Total refined	122,633,000	123,521,000	120,346,000	126,815,000
Grand total liquid stocks	526,859,000	523,049,000	516,687,000	549,879,000

*Revised to include wax, coke and asphalt in barrels.
†Decreases.
‡Includes shipments to noncontiguous territories.
§Deficiency.
xExclusive of producers' stocks.
zIncludes fuel oil.

PRODUCTION OF CRUDE PETROLEUM BY FIELDS AND STATES, WITH CLASSIFICATION BY GRAVITY

(Barrels of 42 U. S. gallons.)

	July, 1926*		August, 1926		Jan.-Aug.,	Jan.-Aug.
Field:	Total	Daily Av.	Total	Daily Av.	1926	1925
Appalachian	2,497,000	80,548	2,466,000	79,548	18,827,000	18,412,000
Lima-Indiana	185,000	5,968	177,000	5,709	1,400,000	1,459,000
Michigan	5,000	161	7,000	226	29,000	.....
Illinois-S. W. Ind.	737,000	23,774	724,000	23,355	5,642,000	5,652,000
Mid-Continent	35,824,000	1,155,607	36,459,000	1,176,096	267,353,000	286,151,000
Gulf Coast	3,546,000	114,387	4,772,000	153,968	24,216,000	21,594,000
Rocky Mountain	3,356,000	108,258	3,154,000	101,742	25,554,000	22,867,000
California	18,743,000	604,619	18,765,000	605,325	147,596,000	153,432,000
Total U. S.	64,893,000	2,093,322	66,525,000	2,145,968	490,617,000	509,995,000
State:						
Arkansas	5,101,000	164,548	4,926,000	158,903	41,440,000	51,302,000
California	18,743,000	604,619	18,765,000	605,325	147,596,000	153,432,000
Colorado	296,000	9,548	271,000	8,742	1,777,000	606,000
Illinois	681,000	21,968	670,000	21,613	5,209,000	5,242,000
Indiana	69,000	2,225	67,000	2,161	527,000	571,000
Southwestern	56,000	1,806	54,000	1,742	433,000	439,000
Northeastern	13,000	419	13,000	419	94,000	132,000
Kansas	3,735,000	120,484	3,672,000	118,452	27,314,000	24,994,000
Kentucky	550,200	17,748	540,600	17,439	4,172,800	4,594,000
Louisiana	2,088,000	67,355	2,042,000	65,871	15,217,000	13,544,000
Gulf Coast	392,000	12,645	387,000	12,484	2,668,000	1,864,000
Rest of State	1,696,000	54,710	1,655,000	53,387	12,549,000	11,680,000
Michigan	5,000	161	7,000	226	29,000	.....
Montana	899,000	29,000	776,000	25,032	5,563,000	2,355,000
New Mexico	133,000	4,291	139,000	4,484	1,006,000	493,000
New York	174,000	5,613	166,000	5,355	1,267,000	1,102,000
Ohio	637,000	20,549	630,000	20,322	4,895,000	4,800,000
Central & East.	465,000	15,000	466,000	15,032	3,589,000	3,674,000
Northwestern	172,000	5,549	164,000	5,290	1,306,000	1,327,000
Oklahoma	14,749,000	475,768	14,802,000	477,482	114,537,000	117,618,000
Osage County	2,190,000	70,645	2,315,000	74,677	16,581,000	19,448,000
Rest of State	12,559,000	405,123	12,487,000	402,805	97,956,000	98,170,000
Pennsylvania	784,000	25,290	784,000	25,290	5,848,000	5,365,000
Tennessee	2,800	90	2,400	77	28,200	9,000
Texas	13,697,000	441,839	15,790,000	509,355	93,061,000	100,676,000
Gulf Coast	3,154,000	101,742	4,386,000	141,484	21,548,000	20,120,000
Rest of State	10,543,000	340,097	11,404,000	367,871	71,513,000	80,556,000
West Virginia	521,000	16,807	507,000	16,355	3,922,000	3,765,000
Wyoming	2,028,000	65,419	1,968,000	63,484	17,208,000	19,413,000
Salt Creek	1,361,000	43,903	1,400,000	45,161	12,306,000	14,117,000
Rest of State	667,000	21,516	568,000	18,323	4,902,000	5,296,000
Classification by gravity (approx.):						
Light crude	53,072,000	1,712,000	54,159,000	1,747,065	402,205,000	417,502,000
Heavy crude	11,821,000	381,322	12,366,000	398,903	88,412,000	92,493,000

*Revised. †Final figures.

STOCKS OF CRUDE PETROLEUM HELD IN THE UNITED STATES

AT REFINERIES (and in coastwise transit thereto). Reported by location of storage:		July 31, 1926	Aug. 31, 1926	Aug. 31 1925*
East Coast:				
Domestic		8,258,000	8,038,000	7,122,000
Foreign		3,092,000	2,905,000	2,370,000
Appalachian		1,722,000	1,659,000	1,302,000
Indiana, Illinois, etc.		1,881,000	1,844,000	1,148,000
Oklahoma, Kansas etc.		3,081,000	2,889,000	4,696,000
Texas:				
Inland		1,133,000	1,010,000	1,131,000
Gulf Coast:				
Domestic		6,627,000	7,029,000	5,153,000
Foreign		416,000	371,000	530,000
Arkansas and Inland Louisiana		572,000	715,000	574,000
Louisiana, Gulf Coast:				
Domestic		6,664,000	7,060,000	3,834,000
Foreign		1,089,000	1,111,000	1,404,000
Rocky Mountain		1,500,000	1,462,000	1,451,000
Total east of California		36,035,000	36,093,000	30,715,000
ELSEWHERE THAN AT REFINERIES:				
Domestic—Reported by field of origin:				
Appalachian:				
New York, Pennsylvania, West Virginia, Eastern and Central Ohio:	Gross	7,269,000	7,235,000	7,087,000
	Net	6,984,000	6,962,000	6,854,000
Kentucky:	Gross	1,772,000	1,583,000	1,966,000
	Net	1,667,000	1,481,000	1,868,000
Lima-Indiana:	Gross	973,000	931,000	1,295,000
	Net	771,000	731,000	1,097,000
Illinois-Southwest Indiana:	Gross	12,212,000	11,930,000	11,448,000
	Net	11,731,000	11,461,000	10,964,000
Mid-Continent:				
Oklahoma; Kansas; Central, North and West Texas:	Gross	148,001,000	146,833,000	172,982,000
	Net	135,295,000	134,472,000	161,629,000
Northern Louisiana and Arkansas:	Gross	41,256,000	39,458,000	42,426,000
	Net	38,831,000	37,129,000	40,159,000
Gulf Coast:	Gross	16,398,000	17,688,000	21,112,000
	Net	16,006,000	17,300,000	20,657,000
Rocky Mountain:	Gross	30,546,000	30,351,000	28,583,000
	Net	30,495,000	30,301,000	28,548,000
Total pipeline and tank farm stocks east of California:	Gross	258,427,000	256,009,000	286,889,000
	Net	241,780,000	239,827,000	271,766,000
Foreign crude petroleum on Atlantic Coast		70,000	75,000	197,000

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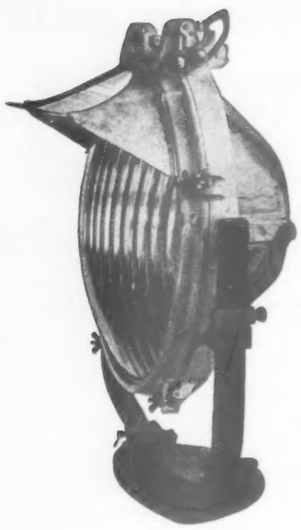

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	July 31, 1926	Aug. 31, 1926	Aug. 31, 1925*
Foreign crude petroleum on Gulf Coast	299,000	453,000	812,000
TOTAL refinery, pipeline and tank farm stocks of domestic and foreign crude petroleum east of California	278,184,000	276,448,000	303,291,000
CLASSIFICATION BY GRAVITY (approx.):			
East of California:			
Light crude (24 degrees and above)	221,013,000	219,406,000	.....
Heavy crude (below 24 degrees)	57,171,000	57,042,000	.....
California: Light	33,583,000	32,124,000	41,556,000
Heavy (including fuel)	87,761,000	87,769,000	78,507,000

*Final figures.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM (BARRELS)

(From Bureau of Foreign & Domestic Commerce)

	July, 1926* Total	July, 1926* Daily Av.	August, 1926— Total	August, 1926— Daily Av.	Jan.-Aug., 1926	Jan.-Aug., 1925†
Imports	5,185,000	167,258	5,332,000	172,000	42,143,000	44,299,000
From Mexico	3,399,000	109,645	3,360,000	108,387	30,465,000	40,558,000
From Venezuela	1,037,000	33,452	1,088,000	35,097	7,710,000	2,296,000
From Colombia	367,000	11,839	549,000	17,710	916,000	.....
From other countries	382,000	12,322	335,000	10,806	3,052,000	1,444,000
Exports	1,726,000	55,677	1,083,000	34,935	10,382,000	9,505,000
Domestic crude oil						
To Canada	1,537,000	49,580	960,000	30,968	8,579,000	6,038,000
To other countries	189,000	6,097	123,000	3,967	1,802,000	3,304,000
Foreign crude oil	.....	.....	.....	.....	1,000	163,000

*Revised. †Final figures.
Note: No crude shipments to territories during August, 1926.

INDICATED DELIVERIES OF CRUDE PETROLEUM, EXCLUSIVE OF CALIFORNIA GRADES, TO DOMESTIC CONSUMERS (BARRELS)

Domestic petroleum by fields of origin:	July, 1926* Total	July, 1926* Daily Av.	August, 1926— Total	August, 1926— Daily Av.	Jan.-Aug., 1926	Jan.-Aug., 1925†
Appalachian	2,514,000	81,097	2,674,000	86,258	18,877,000	18,973,000
Lima-Indiana	227,000	7,322	217,000	7,000	1,640,000	1,586,000
Michigan	5,000	161	7,000	226	29,000	.....
Ill. & S. W. Ind.	860,000	27,742	1,004,000	32,387	4,773,000	5,696,000
Mid-Continent	37,675,000	1,215,323	38,984,000	2,257,548	291,693,000	295,443,000
Gulf Coast	4,098,000	132,194	3,479,000	112,226	26,179,000	21,496,000
Rocky Mountain	3,370,000	108,710	3,348,000	108,000	24,248,000	23,038,000
Deliveries and exports	48,749,000	1,572,549	49,713,000	1,603,645	367,439,000	366,155,000
Deliveries	47,753,000	1,541,387	48,926,000	1,578,226	360,698,000	358,769,000
Foreign petroleum	5,127,000	165,387	5,173,000	166,871	42,021,000	44,059,000
Deliveries of domestic and for. petrol.	52,910,000	1,706,774	54,098,000	1,745,097	402,719,000	402,828,000

*Revised. †Final figures.

NUMBER OF PRODUCING OIL WELLS COMPLETED

July, 1926*	1,81
August, 1926	1,82
January-August, 1926	11,96
January-August, 1925*	11,28

*Final figures.
For states east of California, from The Oil and Gas Journal; for California, from the American Petroleum Institute.

SHIPMENTS OF CALIFORNIA OIL THROUGH PANAMA CANAL TO EASTERN PORTS IN UNITED STATES

(From Panama Canal Record)

	July, 1926	Aug., 1926	Jan.-Aug., 1926	Jan.-Aug., 1925*
Crude oil: Long tons (2,240 lbs.)	120,000	146,000	1,321,000	1,534,000
Barrels (approx.)	862,000	1,048,000	9,500,000	11,046,000
Refined products: Barrels (approx.)	1,495,000	2,143,000	12,760,000	9,114,000
Fuel oil	458,000	717,000	3,338,000	64,000
Gas oil	394,000	614,000	3,409,000	361,000
Gasoline	643,000	812,000	5,411,000	7,080,000
Lubricants	.....	.....	274,000	391,000
Tops	.....	.....	328,000	1,218,000

*Final figures.

COMPARATIVE ANALYSES OF MAJOR REFINED PRODUCTS, AUGUST, 1926, AND PRECEDING MONTHS

(Barrels of 42 U. S. gallons.)

	Production	Imports	Exports*	Stocks End of Period	Domestic Demand
Gasoline:					
January	22,593,000	384,000	3,421,000	41,643,000	16,788,000
February	20,560,000	408,000	3,245,000	44,254,000	15,112,000
March	23,084,000	517,000	3,186,000	46,103,000	18,566,000
April	23,515,000	454,000	4,402,000	45,874,000	19,796,000
May	24,509,000	621,000	4,529,000	42,907,000	23,568,000
June	24,238,000	464,000	3,744,000	40,792,000	23,073,000
July	24,927,000	460,000	3,702,000	38,315,000	24,162,000
August	25,416,000	674,000	3,572,000	34,551,000	26,283,000
January-August	188,842,000	3,982,000	29,801,000	34,551,000	167,347,000
Motor fuel:					
January	23,538,000	.....	.....	.....	.....
February	21,800,000	.....	.....	.....	.....
March	23,998,000	.....	.....	.....	.....
April	24,460,000	.....	.....	.....	.....
May	25,619,000	.....	.....	.....	.....
June	25,374,000	.....	.....	.....	.....
July	26,088,000	.....	.....	.....	.....
August	26,474,000	.....	.....	.....	.....
January-August	197,051,000	.....	.....	.....	.....
Kerosene:					
January	5,113,000	.....	1,871,000	6,848,000	3,515,000
February	4,714,000	1,000	1,577,000	6,857,000	3,129,000
March	5,485,000	1,000	1,785,000	6,998,000	3,560,000
April	5,012,000	1,000	1,642,000	7,014,000	3,356,000
May	5,193,000	4,000	1,623,000	7,378,000	3,210,000
June	4,895,000	3,000	1,604,000	7,877,000	2,895,000
July	4,862,000	21,000	1,612,000	8,439,000	2,709,000
August	5,149,000	20,000	2,689,000	8,186,000	2,733,000
January-August	40,523,000	51,000	14,403,000	8,186,000	25,106,000
Lubricants:					
January	2,649,000	2,000	727,000	7,544,000	1,632,000
February	2,426,000	1,000	739,000	7,909,000	1,273,000
March	2,623,000	4,000	740,000	7,640,000	2,156,000
April	2,670,000	3,000	913,000	7,368,000	2,032,000
May	2,856,000	11,000	715,000	7,656,000	1,864,000
June	2,682,000	3,000	984,000	7,314,000	2,043,000
July	2,847,000	1,000	746,000	7,327,000	2,685,000
August	2,826,000	2,000	660,000	7,226,000	2,275,000
January-August	21,589,000	27,000	6,274,000	7,226,000	15,360,000
Wax (lbs.):					
January	52,630,000	631,000	29,061,000	122,773,000	17,818,000
February	49,922,000	668,000	28,709,000	123,964,000	20,690,000
March	55,329,000	456,000	35,005,000	130,341,000	24,403,000
April	54,986,000	647,000	31,560,000	136,084,000	18,329,000
May	56,050,000	213,000	33,968,000	149,396,000	18,983,000
June	50,672,000	812,000	27,211,000	155,254,000	18,415,000
July	54,267,000	2,089,000	30,768,000	156,704,000	24,133,000
August	54,440,000	968,000	26,906,000	165,065,000	20,141,000
January-August	428,296,000	6,484,000	223,188,000	165,065,000	162,917,000
Gas and fuel oils:					
January	29,319,000	863,000	3,612,000	†23,266,000	.....
February	27,067,000	1,585,000	3,190,000	†21,445,000	.....
March	29,642,000	947,000	2,345,000	†20,267,000	.....
April	28,827,000	1,148,000	3,475,000	†19,773,000	.....
May	30,321,000	1,368,000	2,737,000	†20,841,000	.....
June	29,236,000	1,856,000	3,270,000	†22,554,000	.....
July	31,351,000	1,485,000	2,427,000	†25,696,000	.....
August	31,056,000	1,639,000	3,582,000	†26,500,000	.....

	Production	Imports	Exports*	Stocks end of Period	Domestic Demand
January-August	236,819,000	10,881,000	24,738,000	†26,500,000	.....
August, 1925, for comparison:					
Gasoline	23,191,000	314,000	2,953,000	36,236,000	22,323,000
Kerosene	4,465,000	1,000	1,944,000	9,575,000	3,528,000
Lubricants	2,675,000	4,000	872,000	6,728,000	1,931,000
Wax (lbs.)	47,456,000	1,338,000	25,717,000	117,086,000	18,933,000
Gas and fuel oils	33,502,000	968,000	2,523,000	†29,863,000	.....

*From Bureau of Foreign and Domestic Commerce—subject to revision. Exports, except for wax, include shipments to Alaska, Hawaii, and Porto Rico. †These stocks for east of California only.

RUNS TO STILLS AND OUTPUT OF REFINERIES IN THE UNITED STATES, AUGUST, 1926

Oils Run to Stills (Barrels)

	Crude Oil—Domestic	Crude Oil—Foreign	Unfinished Oils	Natural-Gas Gasoline	Total Oils Run to Stills
East Coast	8,505,000	2,663,000	910,000	196,000	12,274,000
Appalachian	2,554,000	.....	134,000	28,000	2,716,000
Indiana, Illinois, etc.	6,016,000	.....	373,000	80,000	6,469,000
Oklahoma, Kansas, etc.	8,580,000	.....	413,000	322,000	9,315,000
Texas	13,050,000	248,000	232,000	311,000	13,841,000
Louisiana and Arkansas	4,678,000	1,247,000	539,000	81,000	6,545,000
Rocky Mountain	2,532,000	.....	683,000	99,000	3,314,000
California	17,620,000	.....	*577,000	392,000	18,589,000
United States total	63,535,000	4,158,000	3,861,000	1,509,000	73,063,000
Daily average, 8/26	2,050,000	134,100	124,500	48,700	2,356,900
Daily average, 7/26	2,054,000	121,600	118,400	43,600	2,337,600
Texas Gulf Coast	9,947,000	248,000	198,000	272,000	10,665,000
Louisiana Gulf Coast	2,989,000	1,247,000	195,000	7,000	4,438,000

Output and Losses

	Gasoline (bbls.)	Kerosene (bbls.)	Gas and Fuel Oils (bbls.)	Lubricants (bbls.)	Wax (lbs.)
East Coast	3,737,000	986,000	4,875,000	775,000	19,306,000
Appalachian	1,050,000	355,000	653,000	408,000	7,881,000
Indiana, Illinois, etc.	3,440,000	403,000	1,675,000	264,000	6,947,000
Oklahoma, Kansas, etc.	4,599,000	798,000	2,876,000	199,000	4,785,000
Texas	5,257,000	1,319,000	5,263,000	804,000	4,761,000
Louisiana and Arkansas	1,584,000	628,000	2,910,000	99,000	4,303,000
Rocky Mountain	1,461,000	218,000	671,000	53,000	6,457,000
California	4,288,000	532,000	12,133,000	234,000	.....
United States total	25,416,000	5,149,000	31,056,000	2,836,000	54,440,000
Daily average, 8/26	819,800	166,100	1,001,800	91,500	1,756,100
Daily average, 7/26	804,100	156,900	1,011,300	91,800	1,751,000
Texas Gulf Coast	4,111,000	1,095,000	3,954,000	597,000	4,432,000
Louisiana Gulf Coast	1,196,000	579,000	1,469,000	94,000	4,303,000

Output and Losses (Continued)

	Coke (tons)	Asphalt (tons)	Other Finished Products (bbls.)	Unfinished Products (bbls.)	Losses (bbls.)
East Coast	15,128	159,881	127,000	121,000	562,000
Appalachian	1,730	.....	15,000	31,000	165,000
Indiana, Illinois, etc.	25,589	16,214	122,000	90,000	228,000
Oklahoma, Kansas, etc.	13,716	456	40,000	322,000	473,000
Texas	13,543	23,367	4,000	394,000	598,000
Louisiana and Arkansas	10,393	55,998	189,000	587,000	166,000
Rocky Mountain	9,001	3,067	48,000	670,000	95,000
California	.....	46,961	188,000	*633,000	318,000
United States total	89,100	305,944	733,000	2,848,000	2,605,000
Daily average, 8/26	2,874	9,869	23,600	91,900	84,000
Daily average, 7/26	2,689	9,071	25,800	94,400	78,000
Texas Gulf Coast	11,733	23,367	1,000	218,000	495,000
Louisiana Gulf Coast	9,613	53,598	173,000	484,000	76,000

*Includes 183,000 bbls. net tops rerun.

GASOLINE PRODUCTION BY THE VARIOUS METHODS, AUGUST, 1926

(Barrels)

	Straight Run	%	Cracked	%	Natural Gas Gasoline	%	Total
East Coast	2,038,000	55	1,503,000	40	196,000	5	3,737,000
Appalachian	737,000	70	285,000	27	28,000	3	1,050,000
Indiana, Illinois, etc.	1,732,000	51	1,628,000	47	80,000	2	3,440,000
Oklahoma, Kansas, etc.	2,806,000	61	1,471,000	32	322,000	7	4,599,000
Texas	2,830,000	54	2,116,000	40	311,000	6	5,257,000
Louisiana and Arkansas	986,000	62	517,000	33	81,000	5	1,584,000
Rocky Mountain	751,000	51	611,000	43	99,000	7	1,461,000
California	3,896,000	91	.....	..	392,000	9	4,288,000
United States total	15,776,000	62	8,131,000	32	1,509,000	6	25,416,000
United States total, 7/26	15,750,000	63	7,825,000	31	1,352,000	6	24,927,000
Gulf Coasts	2,767,000	52	2,261,000	43	279,000	5	5,307,000

STOCKS HELD BY REFINING COMPANIES IN THE UNITED STATES AUGUST 31, 1926

	Gasoline (bbls.)	Kerosene (bbls.)	Gas and Fuel Oils (bbls.)	Lubricants (bbls.)
United States total	34,551,000	8,186,000	26,500,000	7,226,000
East Coast	7,460,000	1,634,000	6,985,000	2,558,000
Appalachian	675,000	237,000	693,000	942,000
Indiana, Illinois, etc.	3,737,000	609,000	1,526,000	627,000
Oklahoma, Kansas, etc.	2,735,000	262,000	5,247,000	277,000
Texas	3,248,000	1,971,000	8,080,000	1,558,000
Louisiana and Arkansas	3,026,000	1,578,000	2,473,000	103,000
Rocky Mountain	3,781,000	278,000	1,496,000	166,000
California	9,871,000	1,517,000	.....	895,000
United States total	34,551,000	8,186,000	26,500,000	7,226,000
U. S. total, 7/31/26	38,315,000	8,439,000	25,696,000	7,327,000
Texas Gulf Coast	2,871,000	1,690,000	7,003,000	1,516,000
Louisiana Gulf Coast	2,951,000	1,554,000	1,742,000	101,000

	Wax (lbs.)	Coke (tons)	Asphalt (tons)	Other Finished Products (bbls.)	Unfinished Oils (bbls.)
East Coast	74,306,000	17,140	93,660	175,000	†7,182,000
Appalachian	19,177,000	415	39	49,000	964,000
Indiana, Illinois, etc.	25,618,000	22,834	21,315	215,000	3,203,000
Oklahoma, Kansas, etc.	5,468,000	30,771	1,504	84,000	1,566,000
Texas	10,507,000	76,918	6,814	7,000	8,779,000
Louisiana and Arkansas	18,651,000	60,188	33,257	36,000	2,934,000
Rocky Mountain	11,203,000	69,402	7,992	21,000	1,532,000
California	135,000	.....	35,594	261,000	*12,562,000
United States total	165,065,000	277,668	200,175	858,000	39,522,000
United States total, 7/31/26	156,704,000	260,727	184,853	897,000	‡39,851,000
Texas Gulf Coast	10,185,000	74,384	6,814	5,000	8,181,000
Louisiana Gulf Coast	18,651,000	57,537	32,857	33,000	2,586,000

*Includes 4,363,000 bbls. tops in storage.
†Revised figure for July, 1926, 7,853,000.
‡Revised.

NATURAL-GAS GASOLINE, AUGUST, 1926

The production of raw natural-gas gasoline in the United States during August, 1926, amounted to 111,855,000 gallons, a daily average of 3,608,000 gallons, or 85,900 bbls. This represents an increase in daily average production over the preceding month of 1 per cent and over August, 1925, of 21 per cent. Texas, of all the districts, showed the greatest gain in production. Stocks of raw natural-gas gasoline at the plants, August 31, 1926, amounted to 24,830,000 gallons (591,000 bbls.), a decrease from the previous month of 1,631,000 gallons. During the month of August, 1926, the distribution of natural-gas gasoline was as follows: Blended at plants, 3,700,000 gallons; mixed with oils to be run at stills, 11,600,000 gallons,

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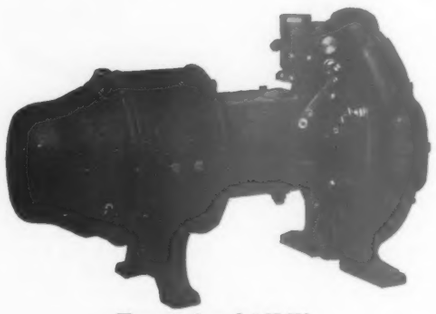

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The Moon Manufacturing Company, anticipating this demand, brought out their "Wonder Machine" of 3 and 4 KW capacities, known as the Type 6. For the past year this machine has been used in all kinds of service without one complaint from any user, and now our sales are going in leaps and bounds.

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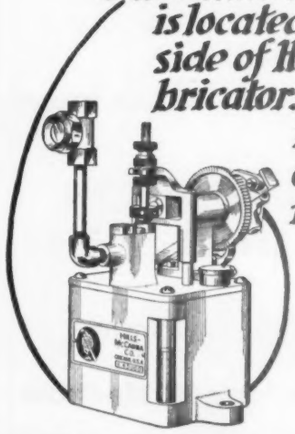

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and blended at refineries, 63,400,000 gallons; total, 78,700,000 gallons, or equivalent to 70 per cent of the current production.

	Natural-Gas Gasoline Production (net)*	Natural-Gas Gasoline Stocks End of Month	Blended Motor Fuel—Natural Gas Gasoline Used in Blends	Blended Motor Fuel—Naphtha or Other Oils Used in Blends	Blended Motor Fuel—Stocks End of Month
Appalachian	5,133,000	2,548,000	153,000	288,000	353,000
Indiana, Illinois, etc.	1,162,000	303,000	61,000	31,000	19,000
Oklahoma, Kansas, etc.	42,855,000	13,445,000	3,049,000	8,003,000	1,901,000
Texas	19,175,000	5,206,000	235,000	926,000	214,000
Louisiana and Arkansas	6,523,000	1,052,000	107,000	241,000	438,000
Rocky Mountain	3,947,000	475,000	100,000	156,000	215,000
Total east of California	78,798,000	23,029,000	3,734,000	9,645,000	3,146,000
California	33,057,000	1,801,000	(Not available)		24,000
Total United States	111,855,000	24,830,000			3,169,000
Daily average	3,608,000				

*1 per cent estimated.

The indicated output of motor fuel in the United States from the above and other sources may be expressed by the following table:

(Barrels)

	July	August
Total gasoline produced at refineries	1,046,900,000	1,067,500,000
(a) Includes natural-gas gasoline blended at refineries: July, 66,800,000; August, 63,400,000		
(b) Includes natural-gas gasoline run through refinery pipe lines: July, 12,300,000; August, 11,600,000		
Gasoline production exclusive of (a) and (b)	977,800,000	992,500,000
Natural-gas gasoline produced at plants	110,400,000	111,900,000
*Benzol production	7,500,000	7,500,000
Total motor fuel produced	1,095,700,000	1,111,900,000
Daily average	35,350,000	35,870,000

*Estimated with production of by-product coke as a basis.

CALIFORNIA AND SOUTH AMERICA COMPETING WITH SOUTHWEST OIL

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York City

NEW YORK, Oct. 9.—September receipts of crude and refined oil at Atlantic ports amounted to 15,547,000 bbls., according to estimates based on capacity of incoming oil laden tanker tonnage. This total exceeds both August, 1926, and September, 1925, in which months receipts were 15,429,000 and 13,544,000 bbls., respectively.

Daily average receipts for September were 518,000 bbls., compared with 498,000 bbls. for August, and 448,000 bbls. for September, 1925.

The indicated increase in oil receipts in September over the same month of 1925, is reflective of the gain in oil demand on the Atlantic Seaboard. At the same time the figures compiled by The Oil and Gas Journal would also seem to reveal why that gain in demand is not benefiting the Mid-Continent-Gulf Coast region particularly, at this time, the evident reason being that the increased consumption is being met by larger purchasers of California and South American oils.

Receipts from the Gulf Coast in September were smaller by 286,000 bbls. than those for the corresponding month of 1925. Receipts from the Pacific Coast, on the other hand, increased to the extent of 921,000 bbls. The gain in imports from South American countries is even greater, amounting to 1,462,000 bbls. These increases are apparently taking just so much of the demand from the Gulf Coast region of the United States.

The following table shows estimated receipts of crude and refined oil at Atlantic Coast ports for the month of September, 1926, August, 1926, and September, 1925 (in barrels):

Source—	Sept., 1926	Aug., 1926	Sept., 1925
Baton Rouge & New Orl'ns.	2,025,000	2,482,000	2,334,000
Pt. Arthur, Sabine & B'm't	3,884,000	3,868,000	4,155,000
Houston, Texas City & Galveston	3,102,000	3,567,000	2,808,000
Gulf Coast	9,011,000	9,917,000	9,297,000
Pac. Coast	2,906,000	1,891,000	1,985,000
Mexico	1,884,000	2,172,000	1,978,000
*S. America	1,746,000	1,449,000	284,000
Total	15,547,000	15,429,000	13,544,000
Daily Averages			
Baton Rouge & New Orl'ns.	67,000	81,000	75,000
Pt. Arthur, Sabine & B'm't.	129,000	124,000	138,000
Hoston, Texas City & Galveston	103,000	115,000	90,000
Gulf Coast	299,000	320,000	306,000
Pac. Coast	98,000	61,000	66,000
Mexico	63,000	71,000	66,000
*S. America	58,000	46,000	10,000
Total	518,000	498,000	448,000

*Including Trinidad.

Imports from Mexico during September, amounting to 1,884,000 bbls., exceeded those from South America by only 138,000 bbls.

Buying California Oil

Illustrative of the apparent tendency on the part of Atlantic Coast marketers to avoid purchasing oil in the Southwest, is the action of Pan American Petroleum Co., which, in September moved approximately 700,000 bbls. of California oil to the Atlantic, against practically none in August.

Standard of New Jersey and Gulf Refining are particularly active in importing South American oil, which is probably replacing that which would otherwise come from the Gulf Coast.

The question is, in view of this situation, whether a price reduction will be forced in the southwestern fields by the ability of refiners to buy cheaper oil elsewhere, particularly in view of the recent upward tendency in crude production in Texas and Oklahoma.

JAPAN TO TRY GAS HEATING

The importation of a modern gas-fired house heating furnace into Japan proves that country is rapidly adopting American methods and ways of living, according to M. Nagai, sales engineer, Toho Gas Co., Toho, Japan. The gas furnace is the latest American-made comfort-giving device. Mr. Nagai, who recently completed an extensive tour of this country, is visiting gas plants and studying the customs and practices of the American gas industry, took back with him a gas house heating boiler. This will be installed on the sales floor of his company, set up and operated for the edification of the Japanese.

TO USE MORE GASOLINE

The Department of Commerce announces receipt of a cablegram from Pyke Johnson, secretary of the American Automobile Chamber of Commerce, stating that a 5-year program of road repair, which has already been commenced in central Europe, will provide that region with a light but modern system of highway transportation, including thousands of miles of motor roads.

IMPROVED OPERATING METHODS REPORTED BY RUSSIAN BUREAU

LONDON, Oct. 9.—A translation of the reports of Azneft, the Russian Soviet oil organization, covering operations in the Baku Fields for the first nine months of the fiscal year beginning October 1, 1925, and ending June 30, 1926, is given below. The translation was made from the official reports on the Baku oil industry.

Drilling

With a view to guaranteeing an output for the current year (ending September 30) of operations of 338,500,000 poods in the Baku district, the program of drilling work fixed a footage for the year of 153,137 meters (71,774 sajens), of which in the first three quarters ending July 31, 114,871 meters. As soon as it was ascertained that old wells would not yield an output up to program, steps were immediately taken to increase the scale of drilling operations. Already in the second quarter the actual footage began to exceed the original program by from 35 to 50 per cent. A supplementary drilling program was confirmed by headquarters for 18,000 sajens (38,405 meters) but the distribution of this footage by months of the second quarter is not as yet known, and therefore we will compare the footage drilled by quarters with the original program:

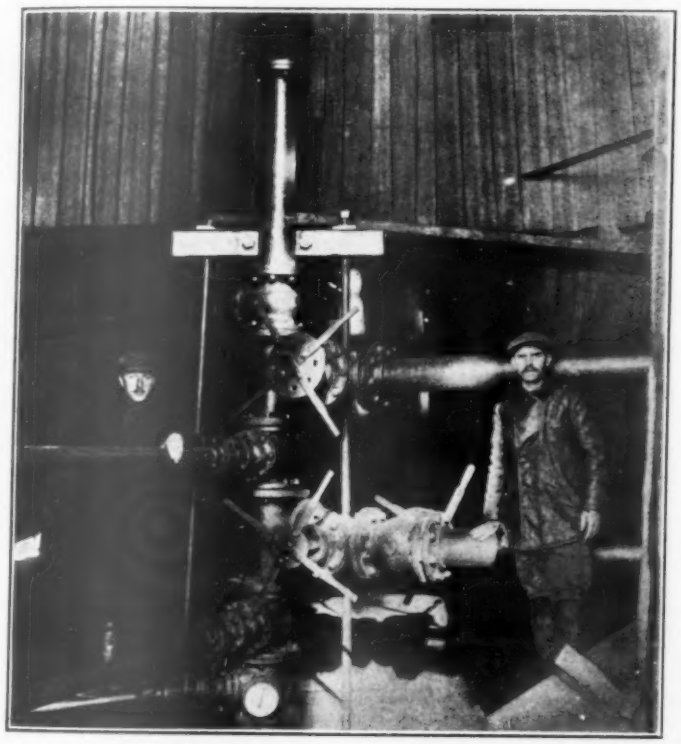
	Meters Drilled	Percentage of Program Fulfillment
First quarter	38,221	97.0
Second quarter	47,527	135.0
Third quarter	58,821	145.9
Total for 3 quarters.	144,569	125.9

From these figures it is first of all seen that the scale of drilling operations steadily increased, showing an average increase of footage of 10,000 meters per quarter. Fulfillment of the program was carried out in the following manner. In the first quarter there was a shortage of 3 per cent due to a considerable deflection from the program of cable drilling. The scale of cable drilling from the very commencement of the year was so extensive that it was found to be impossible to comply with it, because at the time Azneft had not received the instruments and equipment which had been ordered for this drilling Furthermore, in view of this type of work being altogether new, there was not available a sufficiently prepared qualified staff. The second quarter showed an increase over program of 35 per cent and the third quarter an increase of 45.9 per cent.

In the aggregate for the past nine months 144,569 meters were drilled, as compared with 114,871 meters provided for in the program, or an increase of 25.9 per cent.

If we assume that the supplementary footage of 38,405 meters (18,000 sajens) is distributed equally over the months of the second quarter, then to the program for the nine months should be added 19,203 meters, and thus the total program for the nine months would amount to 134,074 meters. (A meter is equivalent to 39.37 inches.) Consequently, the actual footage for these three quarters would exceed even the increased program by 7.8 per cent.

It should be noted that the third quarter constituted a record, unprecedented for the Baku district ever since it became an oil field. For example, in April, 9,045 sajens were drilled, in May, 8,876 sajens and in June, 9,648 sajens. (A sajen is equivalent to seven feet.)



Pressure and output regulating equipment well No. 7258, Plot No. 2, Surakhany.

In regard to quantity of rigs the drilling work for the past nine months can be put as follows: On October 1, 1925, there were in operation 233 rigs, on January 1, 1926, 240; on March 1, 276, and on June 1, 296. Consequently, the number of rigs has increased by 63, and the monthly footage from 13,542 meters in October to 20,585 meters in June.

Improvements in Drilling

The rationalization of drilling during the past period has yielded enormous results. Without taking into consideration purely technical improvements and innovations, we will comment on the unbroken process of extending rotary and cable methods of drilling. A comparison of the number of rigs in operation on October 1, 1925, and June 1, 1926, gives the following picture:

	October 1	June 1
Rotary	102	140
Cable	40	94
Rod	91	62
Total	233	296

With a total increase in the number of active rigs of 63, the number of rod drills decreased by 29, while rotaries increased by 38 and cable by 54.

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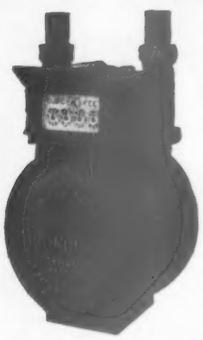

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quarters and methods of drilling, we observe a steadily increasing proportion of rotary and cable drilling:

	In Percentages		
	Rotary	Cable	Rod
First quarter	57.3	15.9	26.8
Second Quarter	57.4	25.6	17.0
Third quarter	68.0	18.8	13.2
Average	61.7	20.2	18.1

These figures indicate that the process of reconstruction of methods in drilling has proceeded steadily, and naturally has involved a considerable lowering in the cost per foot.

If we compare the drilling results of the past nine months with those of the same period of the preceding year, this process of alteration to cheaper and more rational methods of drilling is still more clearly seen:

	Meters Drilled 1924-25	Meters Drilled 1925-26
Rotary	40,148	89,193
Cable	5,148	29,245
Rod	34,955	26,131
Total	80,251	144,569

The total footage for the three quarters of the current year exceed the footage of the three quarters of previous year by 64,318 meters, or 80.1 per cent. But while the footage by rotary method increased by more than double, cable method shows an increase of more than five times—the footage by rod drilling decreased.

If these results were obtained from improvement in organization, still greater were the results which were obtained on the purely technical side. Here our technicians continue to carry on their scientific work, seeking for and applying the newest improvements in the technique of drilling, which will result in the increase in the rate of drilling, and in the end in the reduction of its cost.

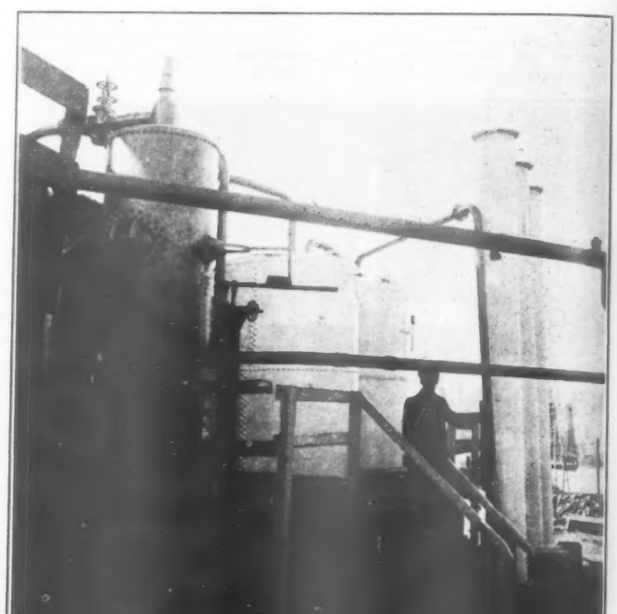
The past nine months of exploitation work allow us to make practical deductions of the greatest importance. The exhaustion of old wells and the yearly decreasing initial output of new wells drilled in the old fields, necessitates the most persistent drilling to bring new petroliferous lands into exploitation. Consequently, prospecting drilling or wildcatting as it is termed in the United States assumes a first-class significance. The position as regards prospecting for the past three quarters may be traced in the following manner: Of the total footage for the nine months of 144,569 meters, 14,592 meters were on prospecting work, i.e., 10 per cent. Prospecting is being carried out both within the limits of the old areas, as also, and more intensively, in the new districts such as Khorosani, Pouta, Kala, Fathman, Zigi, Piri, Kara-Dagh, etc.

The position of affairs necessitates the extension of the scale of prospecting operations.

Output of Oil

As is known, in the first half year there was observed a stability in the output, but, notwithstanding this, the first four months yielded an excess over program. Subsequently, fulfilment of the program proceeded with a certain, although as a matter of fact very inconsiderable, shortage (from 0.5 per cent to 1 per cent), but with April there was remarked a marked tendency towards increase in output.

The average daily output in October, 1925, was 14,278.7 tons. If this output is taken at 100, then the following months gave the following indices: November, 99.5; December, 97.3; January, 1926, 97.8; February, 100.4; March, 99.2; April, 104.6; May, 107.1; June, 113. The average daily output rose from 14,278.7 in October, 1925, to 16,131.2 tons in June, 1926, i.e., by 13 per cent.



Traps and separators of Well No. 6556 on Plot 4 Romany.

The aggregate output by quarters and percentages of program fulfillment are given in the following table:

	Tons	Percentage of Program Fulfillment
First quarter	1,299,395	108.3
Second quarter	1,273,286	97.0
Third quarter	1,405,861	99.1
Oil total	3,978,542	99.7
Gas	112,314	123.3
Total	4,090,856	100.3

During the nine months in the Baku Fields there were produced 3,978,542 tons of oil (approximately 26,656,225 bbls. in 283 days); the program of output was fulfilled almost in its entirety. If to this is added the output of gas, of which during the nine months, 112,314 tons in oil equivalent were produced—an excess over the program of 23.3 per cent, the the aggregate fulfilment of the program for the output of oil and gas amounts to 100.3 per cent.

A more or less noticeable deflection from the program is observable only in the second quarter, where the shortage of 7 per cent in February was of overwhelming significance.

The yearly program of output was put at 5,549,525 tons; consequently, up to the end of the year (September 30) it will

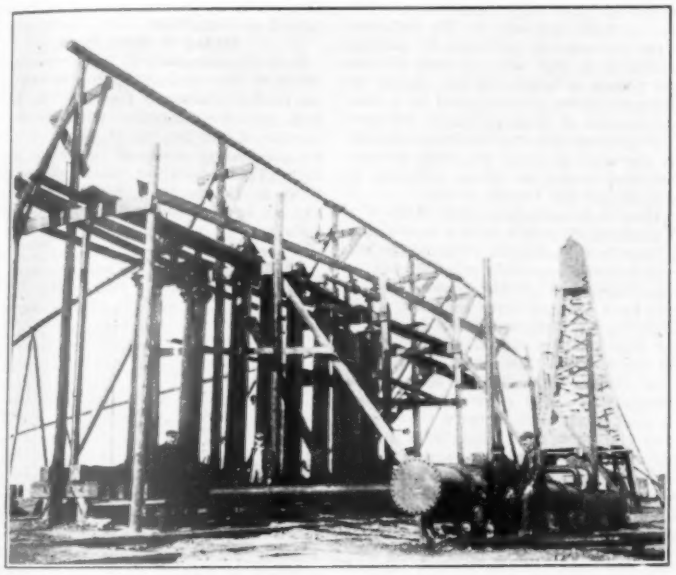
be necessary to produce 1,571 thousand tons, i.e., a daily average of 17,076 tons.

During the last 10 days of June the output exceeded 17,000 tons. The extension of drilling, commenced in the second quarter of the year, is just at this moment beginning favorably to affect the output. Therefore, one may assume that the average daily output in the fourth quarter will increase. But even if it remains at the already attained level, then the yearly program will be fulfilled to the extent of 100 per cent.

A comparison of the output for the past three quarters with the same period of last year gives us the following picture:

	—Output for 9 Mos.— 1924-25 (tons)	1925-26 (tons)	Diff. in %
Deep pumps	305,252	1,140,842	+273.7
Bailing	1,689,551	1,235,375	— 26.9
Compressors	852,248	945,791	+ 11.0
Gushers	435,021	577,108	+ 32.7
Occasional	66,353	79,426	+ 19.7
Total oil	3,348,425	3,978,542	+ 18.8
Gas	58,525	112,314	+ 91.9
Total	3,406,950	4,090,856	+ 20.1

During the three quarters of the current year, October 1 June 30, the output of oil was greater than in the three quarters of last year by 630,117 tons, or 18.8 per cent. The production of gas for the same period increased by almost twice—



Battery of gas holder and gas collector at Well No. 7258 on Plot 2 Surakahny.

i.e., by 91.9 per cent, so that the total output of oil and gas exceeds that of last year by 20.1 per cent.

In last year of operations (for nine months) a dominating role in the production of oil was played by the bailing process, by means of which the yield was 50.5 per cent of the total output of oil. Output by deep pumps accounted for only 9.1 per cent, by compressors 25.5 per cent, and gushers 12.9 per cent.

Deep Pumps Displace Bailing

In the matter of transference to exploitation by deep pumps, an enormous advance has been made in the current year. For the past nine months, by deep pumps there was produced 1,140,800 tons, or 28.7 per cent; by bailing practically the same—1,235,400 tons, or 31 per cent, while exploitation by compressors and gushers was about the same. The development of exploitation by pumping during the current year was on the following scale: In October, 1925, by deep pumps there was produced 106,490 tons, 24.1 per cent; by bailing, 152,863 tons, 34.5 per cent. In June there was produced by deep pumps 154,711 tons, 32 per cent, and by bailing, 125,031, 25.8 per cent, i.e., the output by deep pumps exceeded that by bailing.

The number of wells in exploitation in October, 1925, was 2,258, of which 797 (35.3 per cent) were exploited by deep pumps and 1,364 (60.4 per cent) by bailing; in June, 1926, there were 2,619 wells in exploitation, of which pumping 1,417 (54.1 per cent), and bailing 1,037 (36.9 per cent). During the nine months the number of wells in exploitation increased by 361.

From the new wells which came into exploitation from drilling or deepening for the eight months of the current year (October, 1925, to May, 1926, both inclusive) there was produced 437,700 tons; for the same period of last year, 262,870 tons was the yield from new wells. For the eight months of the current year, 123,985 meters were drilled, while 219 wells were completed by drilling and deepening; for the same period of last year, the figures were: Drilled, 80,253, and wells completed, 159. This comparison shows clearly that the output of new wells is decreasing, and consequently the drilling co-efficient is advancing.

During the nine months the fields used as fuel: Oil, 156,938 tons; gas, 84,974 tons; in all, 241,912 tons. In relation to the gross output of oil and gas, this represents 5.9 per cent. For the nine months of the previous year, the fuel consumption (oil and gas) amounted to 262,105 tons, or 7.7 per cent of the gross output. This decrease in fuel consumption witnesses to the considerable economic results achieved.

Refineries

During the nine months the refineries treated approximately 2,537,399 tons of crude. From the refining process there were obtained the following products: Benzine, 88,880 tons; pure kerosene, 666,045 tons; lubricants, 127,039 tons; special oils, 16,065 tons; solar oils, 32,628 tons; ligroin, 18,510 tons; gas oil, 92,294 tons; black solar, 151,174 tons; fuel residuals, 887,265; semigoudron, 24,491 tons; goudron, 172,214 tons.

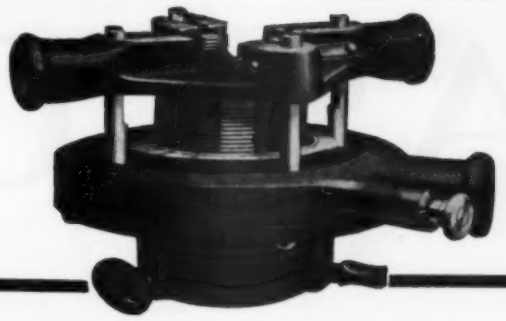
In comparison with last year, there was an increase in crude treated of 270,954 tons, or 12 per cent. The output of products increased as follows: Kerosene by 10.3 per cent, lubricants by 17.5 per cent, benzine by 116.7 per cent, fuel residuals by 13.3 per cent.

The enormous yield of benzine, the production of which increased by more than twice, and also the increase in the yield of lubricants speak eloquently as to improvements in the refinery department.

The yield of benzine in latter months has been brought up to 4.5 per cent, as compared with 2 per cent last year.

VENEZUELA DECISION

Andes Petroleum Corp has announced receipts of a cablegram from its attorneys at Caracas, Venezuela, to the effect that the Federal Supreme Court there had decided in favor of Andes Petroleum Corp. with respect to the location of two "lots" embracing 50,000 acres in District of Paez, part of the Andes' concession, allocation of lots known as Goagira Nos. 1 and 2, had been opposed by Maxudian Petroleum Corp.



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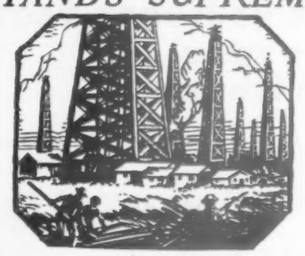

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GOVERNMENT OIL BUREAUS STARVED; HAMPERED BY OFFICIAL CONDITIONS

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Oct. 9.—It is high time for the oil industry to wake up to the need of legislative activity to speed up research work relating to fundamental problems of petroleum which by their very nature cannot be undertaken reasonably by any agency except of the Government.

It is a fact that no other branch of industry has so little attention paid to its needs and receives so much biased criticism, set loose for political purposes, as does the oil industry.

By properly directed efforts these conditions can be changed to some extent at least. Properly organized publicity should bring essential facts to the attention of Congress and accredited representatives of the industry should present its case for the purpose of backing up adequate appropriations for the scientific bureaus that are equipped with personnel of rare ability to work, not only for the industry but for the country at large, in solving problems that will bring wealth to the whole people by increasing the output of petroleum and its products and by a better utilization of these products. No person or interest has any exclusive benefit from the work of these scientific investigators, the profits of whose industry is broadcast for the benefit of all.

How Appropriations Are Made

A great many people have a very vague idea just how legislation is accomplished in Washington especially when it relates to appropriation of the public funds. Times have changed since the days when committees of Congress determined first hand how money should be expended. Now we have a Bureau of the Budget with a director of the budget and a corps of clerks who really exercise the powers of a czar in all such matters.

The first thing that Congress knows about the needs of the Government comes from the director of the budget. The heads of the executive departments send their estimates to the director and he exercises the power of determining what they shall have.

What is asked of him for the support of scientific investigation for instance, is for some mysterious reason regarded as a great secret. It is highly confidental so that the most important investigations might be involved but these scientific bureaus dare not take the public into their confidence in respect to needs they may believe are imperative.

It is in truth a star chamber proceeding. So completely obsessed is the Government with the idea of this kind of secrecy that it is impossible for anyone to gain the confidence of these bureaus sufficiently to know what they have ever asked for. They simply do not violate this rule of secrecy and perhaps it would be suicidal for them to do so.

The Bureau of the Budget is a child of the war. It represents a desperate attempt to bring the country back to normal expenditures. It is also an instrument to relieve Congress of the onerous duty of deciding how money should be appropriated. In 90 per cent of appropriations it is sufficient to say that "this is the amount recommended by the director of the budget." In the case of swollen unusual appropriations attending war conditions this theory of having a director of the budget to simplify the whole process for Congress may work out quite well. However, when it comes to such important questions as those relating to scientific investigation, this system simply smothers the right of free speech and free discussion of public affairs and places these important projects in a position to be decided by one man not especially familiar with them and with more work to do than should be put upon the shoulders of a hundred men.

It so happens, as a necessary condition from which there is no escape, that in order to determine public appropriations by this one-man method there has been a recourse to a process of proportioned cutting of estimates. If the estimates as submitted to the Budget Bureau are 10 or 20 per cent more than it is desired to apportion to a particular department then there is a 10 or 20 per cent cut all around with some few exceptions.

A study of the appropriations that have been given the Bureau of Standards, the Bureau of Mines and Geological Survey will convince anyone that there has not been any increase since 1913, but in fact there has been a decrease in the support given these bureaus.

This is in face of the fact that the Bureau of Labor's cost of living statistics show that the purchasing power of the dollar in 1913 was during the past month just 57 cents. The cost of living in the United States between December, 1914, and June, 1926, has arisen 77.9 per cent. This involves the various items now regarded as necessities.

Failed to Keep Pace

In this connection it is interesting to compare the annual appropriations for the Geological Survey from 1913 to 1927, both inclusive, together with the index number of the Bureau of Labor showing the purchasing power of one dollar since 1913. This tabulation which follows also gives in the fourth column these same annual appropriations in terms of 1913 dollars.

Year	Annual Appropriations for Geologic Surveys	Index No.	Annual Appropriation in Terms of 1913 Dollars
1913	300,000	1.	300,000
1914	300,000	1.02	306,000
1915	400,000	1.01	404,000
1916	350,000	.813	284,550
1917	350,000	.574	200,900
1918	350,000	.513	179,550
1919	347,073.50	.485	168,330.6
1920	347,073.50	.4425	153,550
1921	352,000	.68	239,360
1922	352,000	.6666	234,666.6
1923	300,000	.625	187,500
1924	300,000	.60	180,000
1925	333,722	.58	193,558
1926	325,000	.57	185,250
1927	337,160	.57	192,181.2

This policy of retrenchment in these scientific bureaus has resulted in cutting down their activities to the most commonplace problems that they deal with. It resulted in making it impossible to take up any one of hundreds of fundamental problems that can be taken up in no other place. Private oil companies spend vast sums on what are generally known as commercial research problems. The Government has always been very careful to avoid intrusion into the realm of commercial scientific problems of a nature to be handled equally well by oil companies.

Increase Needed

To have kept the work of these scientific bureaus abreast of the times their appropriations should have been increased at least 100 per cent. There should be a fact be a policy for increasing the work on various problems as rapidly as they can be undertaken.

As an instance of the failure of Congress to provide adequately for this work the writer recalls that when the building to house the Department of the Interior was constructed special foundations were provided for machinery for testing and various experimental purposes in the basement of that structure. Recently when it occurred to him to see how these foundations were used he discovered that there had never been anything erected on them. This was solely because of the niggardly policy in respect to appropriating money for a well-defined program that was laid out when that building was constructed.

Silence Enforced

Another very unfortunate condition has grown up respecting appropriations for these bureaus of scientific research. In order not to "embarrass" Congress, in all the Government departments here there are positive orders against any Govern-

ent employe undertaking to bring to the ttention of Congress except through the ureau of the Budget, any sort of argu- ent for legislation in respect to appro- riations or to the class of work being one. This order is absolute unless a ommittee of Congress should see fit to ll upon officials they desire to hear on arious subjects to express their opinions. s there is no means by which Congress an learn anything about the views of hese officials without such officials vio- ating orders, naturally there is placed pon all these bureaus a blanket of ilence and the views they entertain are argely matters of mystery.

The effect of the Bureau of the Budget as been to a large extent to destroy nitiative in the taking up of new prob- ems of fundamental research. There is o popular demand for any fundamental esearch because such questions are fa- miliar almost exclusively only to the en who are giving them attention and he public is without an initial knowl- dge regarding their necessities. This gag ule, being applied to the small circle of cientific men qualified to advise Con- ress, works in close co-operation with he policy of silence with which these ureaus have been blanketed.

It is a fact that today the work of hese bureaus is very largely limited to uestions of small importance and they re prevented from initiating any great nd fundamental work of research, al- hough there are scores and scores of roblems, that in the opinion of a vast umber of scientific men should receive ttention at once.

To Bring Out the Facts

There is a perfectly feasible way for he oil industry to obtain from Congress proper and adequate support for the eological Survey, the Bureau of Mines nd the Bureau of Standards. It involves he lifting of this blanket of silence and ercing those bureaus into the open, to ake known what in the view of this arge body of scientific workers should be one in respect to fundamental research n the realm of geology, technology and ngineering relating to petroleum prob- ems.

There would be no difficulty in having troduced in the Senate a resolution alling upon the Secretary of the Interior nd the Secretary of Commerce to have repared statements from these bureaus ndicating the various classes of scientific esearch that should be undertaken in he interest of the public welfare. Nat- rally such a resolution would embrace ll branches of research, petroleum be- ng one of them. This resolution should all upon the secretaries indicated to tate what financial support should be iven to various classes of research.

Such a resolution would be passed by he Senate because there still exists that enerated principle of senatorial cour- esy which insures the passage of all uch resolutions of inquiry.

Once such a resolution has been re- ponded to there should be no difficulty n having some committee or different ommittees undertake hearings at which he various scientific workers of the Gov- rnment could be called to the stand to xplain more fully the reasons for pur- uing the various investigations they may ecommend.

Would Awaken Bureaus

It ought to be well understood in the il industry that the general tendency of overnmental functions, whether they op- rate in an executive department or in ongress, is to go into a state of somnol- nce unless there is some outside pres- ure brought to bear to keep them awake nd active.

The national prohibition act is one of he prominent examples of this kind. here was little thought of prohibition n Congress or in the administration at he time that act was first taken up for onsideration. There was, however, a rong, persistent and well-guided propa- anda to bring about prohibition and ongress and the administration were orced to enact and approve the act.

Scientific research has vastly more to ecommend it to the public in respect to he promotion of the national welfare han any other form of activity for which appropriations are given, excepting, perhaps alone, the national defense. But scientific research has in later years been regarded as one of the most effective elements for the national defense. This is so because in the event of war the great body of scientific workers in all of these bureaus are turned to problems relating to the national defense. In the Bureau of Standards, when the World war began there were about 750 employes engaged on problems of peace. The functions of that bureau were overnight turned to problems of war so that in an inconceivably short time 90 per cent of that form of. scientific workers were engaged directly on problems of war and very rapidly the force was increased to the extent of 100 per cent and that whole great war machinery worked on problems of the highest importance in the pursuit of warfare.

The same conditions were applied to the Geological Survey and the Bureau of Mines. Their experts were just the men needed in war problems that arose.

The fact is, any great war that takes place in the future will be a warfare between scientists because it will be fought by scientific methods and the victory will go to that nation that has the greatest scientific knowledge.

But even before any war, if one should take place, preparations for national defense can only be made invulnerable by scientific knowledge. The great body of scientific men in the case of danger to the nation would thus be in effect a reserve corps of the most powerful character.

In the meantime it is acknowledged that the work of these bureaus is for the public at large. Great care is now exercised that all results of research shall be broadcast in such a way as to be available to the people generally. In many cases when it has been necessary to safeguard the public, patents have been obtained and then dedicated for the public use.

In a broader sense the work of these bureaus is for the benefit of the world at large because they promote human knowledge to place the world on a higher plane of living.

CUBA BUYING MORE GASOLINE, LESS CRUDE

By Charles E. Kern

WASHINGTON, D. C., Oct. 9.—Despite the unfavorable economic situation prevalent in Cuba during the past year resulting in a downward movement of Cuba's foreign trade an item which recorded a large gain in United States sales to Cuba was gasoline and naphtha, which increased from 4,877,063 gallons in 1924-25 to 24,803,469 gallons in 1925-26. Sales of crude oil declined from 47,640,063 to 27,174,353 gallons, and sales of gas and fuel oil from 41,286,082 to 25,443,448 gallons. The explanation of the decline in the exports of crude oil and of the rise in our exports of gasoline and naphtha undoubtedly lies in the change in the duty made by the public works law of July 15, 1925, under the provisions of which the import duty of approximately $0.13 a gallon on gasoline was reduced to $0,001, while an internal sales tax of $0.10 a gallon was substituted. Under the present rates on gasoline the importation of the refined product has apparently been stimulated at the expense of crude oil imported for refining within the country.

ARKANSAS GASOLINE TAX

EL DORADO, Ark., Oct. 9.—The Standard Oil Co. of Louisiana again broke all records for the payment of the 4-cent gasoline and 10-cent oil tax in Arkansas for August, the total tax for that month being $105,535,.85. The company's tax for July was $103,720.40, which was the largest ever paid by a single company at that time. The Department of Insurance and Revenues has collected $354,676 on August sales of gasoline and oil and several large companies and many small ones remain to be heard from.

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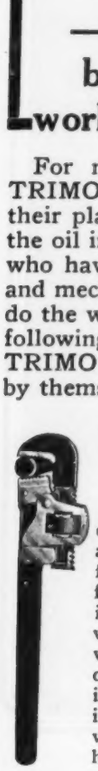

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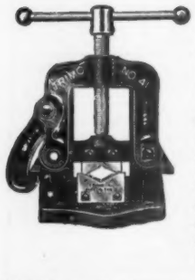

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DEPLETION DEDUCTION REFUSED TO LESSOR

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Oct. 9.— A lessor is not entitled to a depletion deduction based on discovery value unless it appears that such value is materially disproportionate to the cost, according to a decision rendered by the United States Board of Tax Appeals. This case is an appeal of H. E. and M. C. Sadler from the determination of a deficiency of $634.40 in income tax for 1920. The question involved is whether the taxpayer, M. C. Sadler, is entitled to a depletion deduction based on discovery value for the taxable years in question.

Findings of fact show that H. E. and M. C. Sadler, husband and wife, filed a joint return for 1920. H. E. Sadler claimed as a depletion deduction on royalty interest $823.06, which was allowed. M. C. Sadler claimed $5,723.62 as a depletion deduction on royalty interests owned by her, which was disallowed.

In or about 1904, M. C. Sadler acquired for taxes three tracts of land known as the Akin, Chandler and Johnson farms. At some time thereafter she leased the oil rights to these tracts, retaining a one-eighth royalty interest. Oil was discovered on these tracts by operating lessees as of the following dates:

(1) Akin farm, September 1, 1919
(2) Chandler farm, March 16, 1916
(3) Johnson farm (a) August 15, 1919
(b) Oct. 12, 1919
(c) Nov. 26, 1919

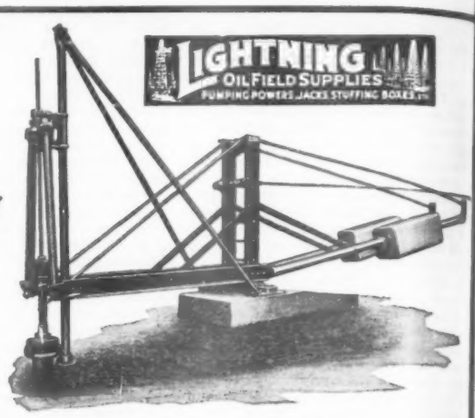
The discovery value or the fair market value of the right to exploit the oil reserves to an operating fee owner as of the aforementioned dates, and the estimated cost of drilling and equipping the necessary wells to exploit these reserves on the various tracts are:

	Discovery Value	Estmd. Cost, Drilling and Equipment
Akin farm	$ 24,188.25	$ 24,000.00
Chandler farm	24,787.50	27,840.00
Johnson farm...(a)	11,256.22	11,600.00
(b)	62,510.00	63,800.00
(c)	21,504.00	17,400.00
Total	$144,333.97	$144,640.00

During 1920 the above properties were operated by lessees, and taxpayer took her depletion deduction based on the discovery value of these properties and the depletion which resulted to her one eighth interest from such operation by the lessees.

The opinion by Morris holds: "The taxpayer contends that as a matter of law she is entitled to an equitable apportionment of depletion on the basis of discovery value regardless of the cost of development sustained by the lessees as the provision in Section 214 (a) (10) of the Revenue Act of 1918 which provides for the equitable apportionment of the depletion allowance between the lessor and lessee is mandatory. That section provides:

"'In the case of mines, oil and gas wells, other natural deposits and timber, a reasonable allowance for depletion and for depreciation of improvements, according to the peculiar conditions in each case, based upon cost, including cost of development not otherwise deducted; provided, that in the case of such properties acquired prior to March 1, 1913, the fair market value of the property (or the taxpayer's interest therein) on that date shall be taken in lieu of cost up to that date: Provided further, that in the case of mines, oil and gas wells, discovered by the taxpayer, on or after March 1, 1913, and not acquired as the result of purchase of a proven tract or lease, where the fair market value of the property is materially disproportionate to the cost, the depletion allowance shall be based upon the fair market value of the property at the date of the discovery, or within 30 days thereafter; such reasonable allowance in all the above cases to be made under rules and regulations to be prescribed by the commissioner with the approval of the secretary. In the case of leases the deductions allowed by this paragraph shall be equitably



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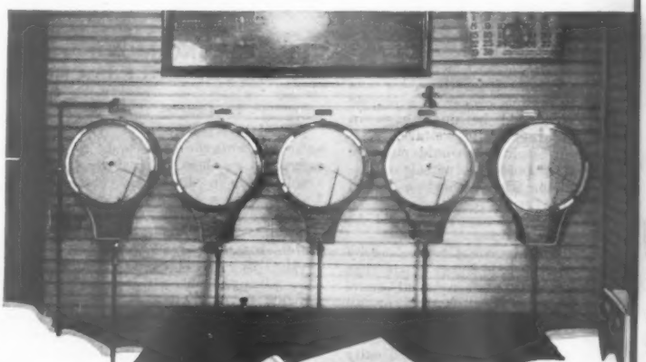

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apportioned between the lessor and the lessee; * * *'

"It will be noted that the last sentence upon which the taxpayer relies contains the words 'the deductions allowed by this paragraph'. Before there can be any equitable apportionment of depletion between the lessor and lessee in the case of leases it must be determined that there is an amount allowable. The section provides for a reasonable allowance for depletion based upon cost, the fair market value of the property as of March 1, 1913, when acquired prior thereto, or the fair market value of the property at the date of discovery, when discovered by the taxpayer, on or after March 1, 1913, and not acquired as the result of purchase of a proven tract or lease, where such fair market value is materially disproportionate to the cost. A prerequisite, therefore, which must be met by either a lessor or lessee in order to sustain a depletion allowance based on discovery value is a showing that such value is materially disproportionate to the cost.

"Article 220 (a) (4) of Regulations 45 provides that cost includes only the cost of exploration and development work to the time the well was brought in, but counsel for the commissioner contends that cost includes the total estimated cost of drilling and equipping the wells necessary to exploit the reserves. Which of these positions is correct, or whether only the original cost or March 1, 1913, value of the property should be taken into consideration, it is unnecessary to decide in this appeal. Even taking the position most favorable to the taxpayer, the determination of the commissioner must be approved, as we have no evidence as to original cost of the tracts in 1904; as to any intervening costs between date of acquisition and the leasing of the premises; as to cost of exploration and development of the properties which resulted in the discovery of oil, nor as to value, if any, on March 1, 1913."

RUMANIA TO INCREASE GASOLINE RECOVERY

Shortage of transportation for oil production at Rumanian refineries has reached a critical stage, as daily production is now well above 1,000 carloads a day, while maximum capacity of the pipeline to Constantza is 60 carloads a day and railroads are unable to handle more than 585 carloads, according to the United States Department of Commerce. The railroads' service will probably be reduced by effort to move the grain crop. Storage capacity is already heavily taxed, and curtailment of production appears likely. Prices have declined from 31,500 lei a carload to 24,200.

It is understood that most of the larger oil companies operating in Rumania have contracted, or consider contracting, for a new process by which Rumanian oils will produce from 20 per cent to 24 per cent gasoline, instead of from 4 to 5 per cent as heretofore. Material and equipment have already been ordered.

With annual crude output of more than 3,000,000 tons in sight, and further increases expected, and with a total refining capacity of 3,500,000 tons a year for the country, this increase in the proportionate extraction of gasoline represents an appreciable addition to world supplies. It also represents an additional problem for Rumanian transportation facilities, already inadequate.

BELGIAN PETROLEUM MARKET

Belgian petroleum market was adversely affected during July by wide fluctuations of the exchange, according to the United States Department of Commerce. Decline in purchasing power of the franc has caused all petroleum prices to rise appreciably, resulting in decreased demand, especially for gasoline, demand for which fell off 10 to 15 per cent in July, although already low in June. Prices rose from 285 francs each 100 liters at end of June to 340 at end of July.

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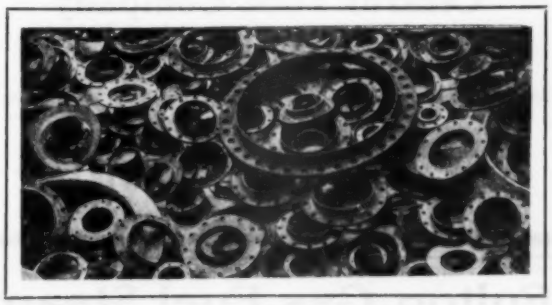

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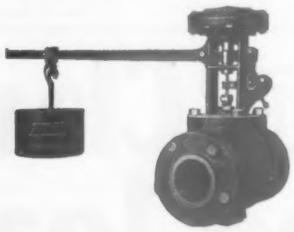

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41

Naval Oil Reserve In Osage Discussed Again at Washington

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Oct. 9.—Congress is now in possession of the last chance it will ever have to create a naval oil reserve in the Osage. Although the initial move for this purpose was made November 14, 1917, when the Osage Tribal Council, as a patriotic act, offered the government a naval oil reserve in their tribal land, the entire transaction was regarded as a war measure and was not published until recently referred to in The Oil and Gas Journal.

Now for the first time it is possible to publish the text of the resolution as follows:

"November 20, 1917.

"Resolution of the Tribal Council.

"Be it resolved by the Osage Tribal Council duly assembled at Pawhuska, Okla., on this 14th day of November, 1917, that the Secretary of the Interior is hereby requested to grant to the Secretary of the Navy for the use of the United States eight sections of land of the Osage tribe, to be selected by him for leasing for oil, on a royalty basis of one-sixth of the oil produced and free of any bonus or requirement as to the amount of money to be expended in drilling for oil.

"Signed)

FRED LOOKOUT, Principal Chief.
PAUL RED EAGLE, Asst. Chief.
"George Tinker, Secretary."

The foregoing resolution is in force today and the sections set aside at that time for this naval oil reserve are still intact with an adequate protecting area surrounding the land chosen to take care of drainage.

However, the administration never authorized the acceptance of this oil reserve although the war powers possessed at that time by President Wilson undoubtedly would have made it possible to have done so. If this offer had been accepted the entire situation would have been quite different from the one presented today; as the case now stands it is in the nature of an unaccepted offer still held in abeyance with a question respecting the propriety of its acceptance at this late day unless the Osage Tribal Council should give further approval of such acceptance.

Nothing Ever Done

Nothing having been done in this respect the council took occasion, some months ago, to suggest that it wished to have this offer definitely concluded so that the land that was selected at that time might be offered for drilling purposes as it was selected by petroleum geologists of the Geological Survey as the most promising oil land in the Osage. This action was taken by the council because Secretary Hubert Work, with a wise eye to the needs of national defense, had refrained from offering any of this land, or any of the land that might drain it for leasing purposes. Now that the Federal Oil Conservation Board of necessity would be empowered to consider the propriety of recommending to Congress the acquisition of this valuable oil reserve, its importance for national defense purposes, has come to the front.

Under the authority of this resolution the following additional memorada was adopted by the Osage Tribal Council, definitely offering the sections of land in the Osage Nation that were to be leased by the Navy Department as follows:

"On the understanding that lands to be leased by the Navy Department are not to be held as a naval reserve without drilling at an early date, and with the object of consolidating the tracts in not more than three blocks, the following revised recommendations are submitted:

Blocks Included

"The irregular outline of the blocks is due to the irregular configuration of the folds from which the choice of tracts is

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made, the desire being to select the best of the area of the structure:

"Township 23n, Range 7e, Section 12, SE half Section 11, E half Section 1.

"Township 24n, Range 7e, Section 36, Section 25, NW Section 27, NE Section 28, E half Section 21, Section 22, NW Section 23, SW Section 15.

Township 25n, Range 6e, W half, Section 3; Section 4, SE, Section 5.

The above plots in three sections comprise 5,128 acres. This makes eight complete sections and the area and location of these sections is shown on the map accompanying this resolution on file in the Indian Office, Department of the Interior.

It appears that there was an original selection of land for this naval oil reserve, which was superceded by the selection noted above. The memoranda showing the selection of oil land for the naval oil reserve were forwarded to the department by J. George Wright, along with other resolutions with the following statement:

"I inclose resolution of the Osage Council, dated November 14, 1917, requesting the Secretary of the Interior to grant to the Secretary of the Navy for use of the United States, eight sections of land of the Osage tribe to be selected by him for leasing for oil on a basis of one-sixth of the oil produced free of any bonus or requirement as to the amounts of money to be expended in drilling for oil and authorizing the principal chief to execute leases therefor on behalf of the Osage tribe."

The record in the Indian Office shows that the Navy Department was notified of the passage of this resolution and of the land selected for the naval oil reserve, December 10, 1917, but the Navy Department never took any action for the formal acceptance of the land.

Limitation on Offer

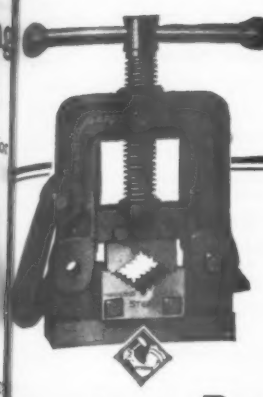
Of course, the limitation placed upon this offer by the Osage Council, by stating that "on the understanding that the lands to be leased by the Navy Department are not to be held as a naval reserve without drilling at an early date," of the utmost importance, especially as it must be acknowledged that this offer was in view of war conditions existing at that time. However, the same object that inspired the government then under impending conditions to welcome such offer in a sense applies today when the government is undertaking to plan for the national defense with an adequate supply of fuel oil and other products of petroleum to be available in a national emergency.

The three areas that will be of interest to all producers who have their eyes fixed upon locations in the Osage, were supposed at that time to be capable of producing a substantial quantity of oil for the navy. Estimates of the quantity of oil in structures have proven so erroneous in the past because of the impossibility of ascertaining conditions without drilling that great uncertainty of necessity exists respecting the oil that might be found in these locations. However, it is believed that this estimate at the time made was as accurate as any estimate in an undrilled location, with geologic knowledge and with production knowledge in surrounding territories as guiding factors.

It must be remembered that if Congress does not see fit to change the existing law providing for the leasing of one-tenth of the Osage tribal oil lands annually, it will be not more than three or four years as the extreme limit of time when these reserve sections must be thrown on the market. In that event it is acknowledged by geologists that no other equally promising naval oil reserve, that could be protected from drainage, could be found anywhere in the United States. As there are oil reservations on the Pacific Coast and in Wyoming, the greatest convenience for an additional reserve would be served by a location within reasonable reach of the Gulf Coast. This reserve in the Osage lands is regarded as meeting every possible requirement in respect to location and prospect for production.

Area Held Intact

It is recognized that now that this



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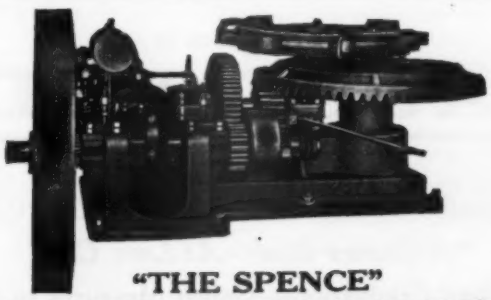

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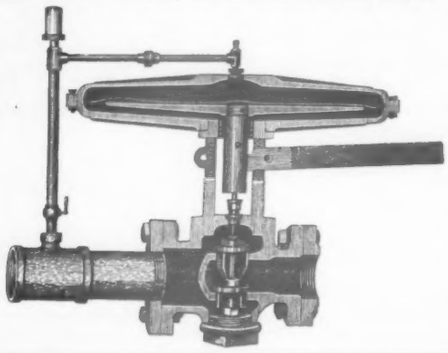

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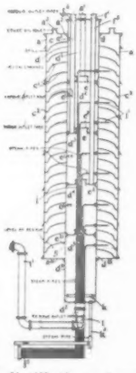
area has been held intact and so much time has elapsed from the date of the generous offer made by the Osage Tribal Council, the entire matter will have to be taken up anew with the Council. While the council has within recent months, indicated its desire to have this resolution making the offer for a naval oil reserve definitely cancelled, there seems to be every reason to believe that the council would agree to negotiating with the United States for the sale of the selected areas for naval oil purposes. The fact that the government is the trustee for the council offers no insuperable difficulty in the acquisition of this oil land because everything that is done affecting the disposition of these oil lands is with the approval of the Tribal Council. If Congress should authorize the acquisition of this land, it would be necessary only to come to an agreement with the council in respect to the probable oil production of the tracts selected and to determine its value on a basis of the royalty that would eventually be received by the Indians, together with such bonus as the Indians might agree to. Although the tribal offer of this land to the United States stipulated that there should be no bonus, it is not regarded as reasonable to hold the tribe to such agreement at this time. Reducing the estimated royalties that might be received by the Osage Indians to a cash basis and adding a reasonable bonus would produce a sum in cash that could not fail to receive the approval of the council. Considering the possibility of reserving such a valuable oil deposit, free from drainage, the cost to the Government may appear to be very reasonable.

Whatever may be the ultimate result of a negotiation, however, it seems very evident to a great many people that no harm could possibly result from an attempt to reach an agreement for the purchase of this proposed naval oil reserve.

So far as the Osage tribe is concerned there seems to be but one idea in respect to its oil domain, which is in favor of getting as much money as possible for the tribal members. That ambition would not be interfered with by the proposed purchase of this naval oil reserve.

Recent Patents

1,594,200. Still and Method of Distilling. Percy Mather, London, England. Filed August 9, 1921, Serial No. 490,949, and in Great Britain August 18, 1920. 22 Claims. (Cl. 196—73.)



1. In the distillation of crude oil and other similar liquids, a method of evaporation consisting in causing the liquid to flow in a descending course, intercepting the liquid to form pools at successively lower levels, the liquid flowing successively from pool to pool, applying heat laterally to the liquid in its course, liberating the vapors from the liquid in the pools at the side away from that at which heat is applied and shielding the vapors from the direct application of heat, substantially as described.

1,593,905. Oil-Treating Apparatus. Joseph W. Lewis, Philadelphia, Pa., assignor to the Atlantic Refining Co., Philadelphia, Pa., a corporation of

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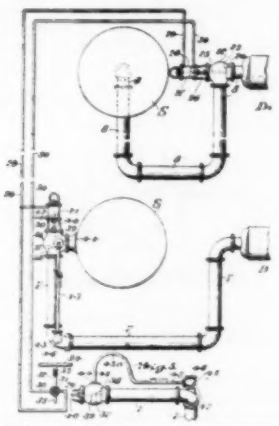
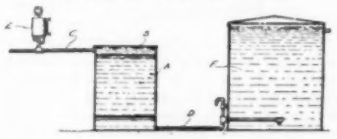
Pennsylvania. Filed July 6, 1922. Serial No. 573,170. 12 Claims. (Cl. 196—108.)



2. The combination with pressure still structure comprising a vertical still, heat absorption structure comprising a plurality of tubes, connections from the lower and upper ends of said tubes to said still at different levels thereof, and means maintaining super-atmospheric pressure in said still and tubes, of valves in said connections, and means for actuating said valves to open or closed positions simultaneously.

7. The combination with pressure still structure comprising an oil containing chamber, heat-absorption structure, a connection between them, and means for maintaining super-atmospheric pressure in said chamber and heat-absorption structure, of a valve in said connection, a by-pass around said valve, and a check valve in said by-pass.

1,596,586. Process for Treating Water in Oil Emulsions. Melvin De Groote, St. Louis, Mo., assignor to William S. Barnickel & Co., Webster Groves, Mo., a corporation of Missouri. Filed December 23, 1924. Serial No. 757,735. Three claims. (Cl. 196—4).



3. A process for breaking water in oil emulsions, characterized by adding a suitable demulsifying agent to such an emulsion and passing said emulsion through a bed of sand held in a quiescent state and composed of small sized particles separated by voids approaching capillary proportions.

1,596,589. Process for Treating Petroleum Emulsions. Melvin De Groote, St. Louis, Mo., assignor to William S. Barnickel & Co., Webster Groves, Mo., a corporation of Missouri. Filed April 6, 1925. Serial No. 21,208. Three claims. (Cl. 196—4).

3. In the treatment of petroleum emulsions the step of subjecting the emulsion to the action of a treating agent composed of a lactone.

1,599,369. Process of producing from Crude Petroleum Purified Asphaltic Residues. Sidney W Moss, Morristown, N. J., assignor to The De Laval Separator Company, New York, N. Y., a Corporation of New Jersey. Filed September 29, 1922. Serial No. 591,212. 1 Claim. (Cl. 196—6.)

The method of producing, from crude petroleum that is contaminated with insoluble impurities, an asphaltic derivative having a minimum percentage of impurities, which comprises heating the petroleum to a distilling temperature in two stages and subjecting the petroleum between the first and second heating stages to the action of centrifugal force to eliminate therefrom the major part of its content of insoluble impurities, the temperature of the second stage being maintained until an asphaltic residue is left, whereby the deposition of salt and

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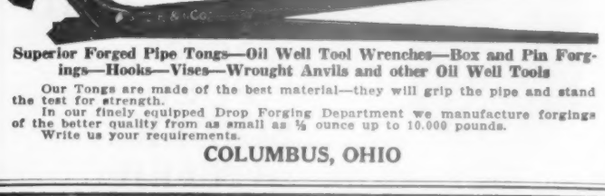

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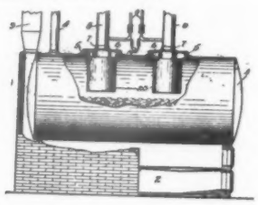
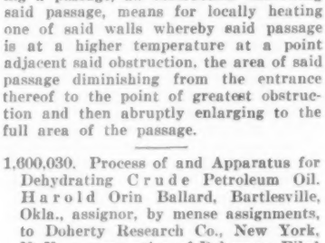
other impurities in the high temperature still is minimized and an asphaltic derivative produced which contains substantially less than 2 per cent of insoluble matter.

1,598,618. Apparatus for Cracking Oil. M. Page, Geneva, Ill., assignor to George Fabyan, Geneva, Ill. Filed March 22, 1922. Serial No. 545,766. 6 Claims. (Cl.196—104.)



2. In a heating device for the vapor space of an oil still, two walls constituting a passage, an obstruction narrowing said passage, means for locally heating one of said walls whereby said passage is at a higher temperature at a point adjacent said obstruction, the area of said passage diminishing from the entrance thereof to the point of greatest obstruction and then abruptly enlarging to the full area of the passage.

1,600,030. Process of and Apparatus for Dehydrating Crude Petroleum Oil. Harold Orin Ballard, Bartlesville, Okla., assignor, by mense assignments, to Doherty Research Co., New York, N. Y., a corporation of Delaware. Filed April 10, 1919. Serial No. 288,941. 24 Claims. (Cl. 196—5.)

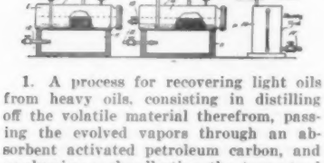


2. A method of dehydrating petroleum oil, comprising heating the oil, passing the heated oil in a continuous stream through a closed chamber, and removing emulsion from the bottom of said stream as it settles by gravity.

1,599,100. Improvement in Pyrogenetic Manufacture of Gasoline. Francis M. Rogers and Max G. Paulus, Whiting, Ind., assignors to Standard Oil Co., Chicago, Ill., a Corporation of Indiana. Filed July 21, 1919. Serial No. 312,400. 2 Claims. (Cl. 196—47.)

1. The herein described improvement consisting in conducting pyrogenetic distillation of a hydrocarbon oil of relatively high boiling point, condensing the gasoline containing distillate in a condenser in communication with the still and under still pressure, isolating the liquid permitting the gas dissolved in the distillate to pass out of the distillate while under pressure, and releasing the gas upon such separation with a gradual reduction of pressure.

1,599,429. Process of Recovering Light Oils From Residual Products. Alfred Oberle, Oak Park, Ill., assignor of one-half to Thomas E. Schofield, Kansas City, Mo. Filed April 14, 1924. Serial No. 706,340. 5 Claims. (Cl. 196—96.)



1. A process for recovering light oils from heavy oils, consisting in distilling off the volatile material therefrom, passing the evolved vapors through an absorbent activated petroleum carbon, and condensing and collecting the treated vapors as distillate.

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Bits—Rotary Disc—
Hughes Tool Co.

Bits—Rotary Rock—
Hughes Tool Co.
Reed Roller Bit Co.

Bit Steel (See Steel—Bit)—

Bleaching Powder—
Mathieson Alkali Works, Inc.

Blow-Off Valves (See Valves)—

Blowout Preventer—
Reagan Forge & Engineering Co.
Stearns-Roger Mfg. Co.

Blowpipes—
Oxweld Acetylene Co.

Boiler Insulation
Celite Products Co.

Boilers—Horizontal Return Tubular—
Brownell Co., The
Kewanee Boiler Co.
Vogt, Henry, Machine Co.

Boilers—Oil Country—
Bovaird & Seyfang Mfg. Co.
Bridgeport Machine Co.
Brownell Co., The
Coatesville Boiler Works.
Continental Supply Co.
Donovan Boiler Works.
Frick-Reid Supply Co.
International Supply Co.
Kewanee Boiler Co.
Lucey Mfg. Co.
National Supply Co.
Oil Well Supply Co.
Pattin Bros Co.
Republic Supply Co.
Titusville Iron Works.

Bolted Tanks (See Tanks)—

Bolts and Nuts—
Sheffield Steel Corp.

Bolt Threading Machines—
Landis Machine Co.

Bottles—Glass—
Illinois Glass Co.

Box and Pin Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Braces—Tool—
Dunn Mfg. Co.

Brick—Fire—
Pilbrico Jointless Firebrick Co.

Briquette Machines—
Porter & Co.
Simplex Equipment Co.

Bronze Valves (See Valves—Brass and Bronze)—

Buildings—Metals, Sectional (All Types)—
Austin Co.
Blaw-Knox Co.
Braden Co.
Butler Mfg. Co.
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Truscon Steel Co.

Bulk Station Tanks (See Tanks)—

Bull Ropes—
Ajax Rope Co.
Columbian Rope Co.
Plymouth Cordage Co.
Wall Rope Works, Inc.

Bull Wheels—Steel—
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Moore, Lee C., & Co., Inc.
Parkersburg Rig & Reel Co.

Burners—Gas—
Eureka Burner Co.

Burners—Oil—
Continental Supply Co.
Reid, Joseph, Gas Engine Co.

Bushings—Rotary Drive—
Wilson Oil Tools Corp.

C

Cable Bit Steel—
Andrews Steel Co.
Federal Supply Co.
Heppenstall Forge & Knife Co.

Cables—Drilling, Manila—
Ajax Rope Co., Inc.
Columbian Rope Co.
Continental Supply Co.
Frick-Reid Supply Co.
Plymouth Cordage Co.
Wall Rope Works, Inc.

Cables—Steel—
Ajax Rope Co., Inc.
Black Steel & Wire Co.
Broderick & Bascom Rope Co.
Continental Supply Co.
Frick-Reid Supply Co.
Hazard Mfg. Co.
Leschen, A., & Sons Rope Co.
Murray Tool & Supply Co.
National Supply Co.
Republic Supply Co.
Wickwire-Spencer Steel Corp.
Williamsport Wire Rope Co.

Calf Rope—
Ajax Rope Co., Inc.

Calf Wheels—Steel—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

Cannon—Oil Field—
Braden Co.

Cans—Water—
Gott, H. P. Mfg. Co.

Capping Steel—
Andrews Steel Co.

Carbon—Black Diamond—
Diamond Drill Carbon Co.
Patrick, R. S.

Cars—Tank—
American Car & Foundry Co.
General American Tank Car Corp.
Shippers' Car Line, Inc.

Cars—Tank, Leased—
American Car & Foundry Co.
North American Car Co.
Shippers' Car Line, Inc.

Casing—
Bovaird Supply Co.
Central Tube Co.
Continental Supply Co.
Emsco Derrick & Equip. Co.
Jarecki Mfg. Co.
National Supply Co.
National Tube Co.
Pittsburgh Steel Products Co.
Republic Iron & Steel Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Wheeling Steel Corp.

Casing—Wrought Iron—
Byers, A. M., & Co.
Reading Iron Co.
South Chester Tube Co.

Casing Elevators (See Elevators, Casing and Tubing)—

Casing Heads—
Arbon, Paul & Co.
Dresser, S. R., Mfg. Co.
Kansas City Hay Press Co.

Casing Lines—
Ajax Rope Co., Inc.
Hazard Mfg. Co.

Casing Shoes—
Baker Casing Shoe Co.
Bartlesville Supply Co.
Bridgeport Machine Co.
Guiberson Corp.
Oil Well Supply Co.

Castings—Acid Proof—
Duriron Co.

Castings—Alloy Steel—
Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

Castings—Chrome Nickel Steel—
Sivyer Steel Casting Co.

Castings—Corrosion Resisting Non-Ferrous—
Hills-McCanna Co.

Castings—Electric Steel—
Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

Castings—Grey Iron—
Ajax Iron Works.
American Car & Foundry Co.
Gaso Pump & Burner Mfg. Co.
Pittsburgh Boiler & Machine Co.

Castings—Steel—
Ajax Iron Works.
Chicago Steel Foundry Co.
Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

Cement—Fire and High Temperature—
General Insulating & Mfg. Co.

Chains—Conveyors—
Chain Belt Co.
Link-Belt Co.

Chains—Oil Well—
Baldwin Chain & Mfg. Co.
Chain Belt Co.
Link-Belt Co.

Chains—Power Transmission—
Baldwin Chain & Mfg. Co.
Chain Belt Co.
Link-Belt Co.

Chemical Treatment Crude Oil Emulsion—
Barnickel, Wm. S., & Co.

Chlorine—Liquid—
Mathieson Alkali Works, Inc.

Circulating Heads—
Wilson Oil Tools Corp.

Clamps—Anchor—
Bartlesville Supply Co.

Clamps—Belt—
Federal Supply Co.

Clamps—Collar Leak—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Skinner, M. B., Co.

Clamps—Drilling—
Western Supply Co.

Clamps—Hoisting—
Newton Process Mfg. Co.

Clamps—Pipe—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.

Clamps—River—
Dresser, S. R., Mfg. Co.
Gaso Pump & Burner Mfg. Co.

Cloths—Wiping—
Nye Tool & Machine Works.

Clutches—Friction, Plate Type—
Twin Disc Clutch Co.

Cocks—Brass & Iron—
Lunkenheimer Co.
Walworth Co.

Cocks—Plug—
Homestead Valve Mfg. Co.

Cocks—Plug, Acid Proof—
Duriron Co.

Cocks—Water Gauge—
Shaffer, J. E., Co.
Smith Separator Co.

Coils and Bends—Pipe—
Harrisburg Pipe & Pipe Bending Co.
Midwest Pipe & Supply Co.

Compounds—Boiler—
Dearborn Chemical Co.

Compounds—Cement, Quick Setting—
Master Builders Co.
Sullivan Co.

Compounds—Joint Sealing—
Key Boiler Equipment Co.

Compounds—Oil Well Cleaning—
Sullivan Co.

Compressed Air Process—
Air Cleaning & Reaming Corp.

Compressor Cylinders (See Cylinders—Compressor)—

Compressors—Air—
Bessemer Gas Engine Co.
Clark Brothers Co.
Cooper, C. & G., Co.
Gardner Governor Co.
Ingersoll-Rand Co.
Sullivan Machinery Co.

Compressors—Ammonia—
Carbondale Machine Co.
Cooper, C. & G., Co.

Compressors—Direct Connected Motor and Gas Engine Driven
Buffalo Gasolene Motor Co.
Clark Brothers Co.
Cooper, C. & G., Co.
Miller Improved Gas Engine Co.

Compressors—Direct Driven Air and Gas—
Bessemer Gas Engine Co.
Miller Improved Gas Engine Co.

Compressors—Gas—
Bessemer Gas Engine Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Cooper, C. & G., Co.
Hope Engineering & Supply Co.
Ingersoll-Rand Co.
National Transit Pump & Machine Co.
Worthington Pump & Machinery Corp.

Compressors—Oil—Coke—
Porter & Company.

Concrete-Hardener and Waterproofer—
Master Builders Co.

Condenser Boxes—
Kaw Steel Construction Co.
Petroleum Iron Works Co.

Condensers—
American Radiator Co.
Chicago Pneumatic Tool Co.
National Gas Products Co.
Ross Heater & Mfg. Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.

Controllers—Automatic—
Brown Instrument Co.

Controllers—Liquid Level—
Fisher Governor Co., Inc.
Newton Process Mfg. Co.
Smith Separator Co.

Controllers—Pressure—
Smith Separator Co.

Controllers—Temperature—

Conveying & Elevating Machinery
Brady Conveyors Corp.

Conveyors—Bucket and Belt—
Brady Conveyors Corp.

Conveyors—Pneumatic—
Brady Conveyors Corp.

Conveyors—Portable Belt—
Barber-Greene Co.

Cooling Towers—Atmospheric—
Braun, C. F., & Co.
National Gas Products Co.

Cordage—
Bridgeport Machine Co.
International Supply Co.
Plymouth Cordage Co.

Core Drilling—
Longyear, E. J., Co.

Core Drills—
Elliott Core Drilling Co.

Core Drills—Diamond—
Longyear, E. J., Co.
Sullivan Machinery Co.

Core Drills—Diamonds For—(See Diamonds for Core Drilling)—

Coring Tools—
Reed Roller Bit Co.
Wilson Oil Tools Corp.

Couplings—Flexible—
Nuttall, R. D., & Co.
Victaulic Co. of America.

Couplings—Plain End Pipe—
Dayton Pipe Coupling Co.
Dresser, R. S., Mfg. Co.

Couplings—Seamless Steel—
Harrisburg Pipe & Pipe Bending Co.
Superior Tube Co.

Couplings—Steel for Casing, Line Pipe, Drill Pipe and Tubing—
Dayton Pipe Coupling Co.
Smith, A. O., Corp.

Cracking Processes—
Graver Corp.
Kellogg, M. W., Co.
Universal Oil Products Co.

Crawler Treads—
Belle City Mfg. Co.
Full Crawler Co.

Crown Blocks—
International Derrick & Equipment Co.
Lucey Mfg. Corp.
Moore, Lee C., & Co., Inc.
Parkersburg Rig & Reel Co.

Cups—Composition—
Williamsport Development Co.

Cups—Leather—
Auer, C. A.

Cutters—Pipe—
Borden Co.
Nye Tool & Machine Works.
Trimont Mfg. Co.

Cylinders—Compressor—
Hope Engineering & Supply Co.

Cylinder Stocks—
Barnsdall Refining Co.
Pure Oil Co.
Texas Company, The.

D

Dehydrating Process—
Barnickel, Wm. S., Co.

Dephlegmators—
Graver Corp.
National Gas Products Co.
Newton Process Mfg. Co.
Smith, A. O., Corp.

Depletion Reports—
American Appraisal Co.

Derricks—Steel—
Emsco Derrick & Equip. Co.
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Moore, Lee C., & Co., Inc.
O'Brien Steel Construction Co.
Parkersburg Rig & Reel Co.
Superior Tube Co.

Derricks—Turnbuckle—
National Turnbuckle Derrick Co.

Diamonds—For Core Drilling—
Patrick, R. S.

Die Heads—Automatic Screw Cutting—
Landis Machine Co.

Die Heads—Bolt Threading—
Bignall & Keeler Mch. Works.
Landis Machine Co.

Die Heads—Stationary Pipe Threading—
Bignall & Keeler Mch. Works.
Cox & Sons Co., The.
Landis Machine Co.

Diesel Engines (See Engines)—

Dies—Pipe Threading—
Bignall & Keeler Mch. Works.
Cox & Sons Co., The.
Landis Machine Co.
Nye Tool & Machine Works.

Direct Driven Pumps (See Pumps)

Disc Bits (See Bits—Disc)—

Ditchers—Pipe Line—
Barber-Greene Co.
Buckeye Traction Ditcher Co

Draw Works—
Lucey Mfg. Corp.
National Supply Co.
Titusville Iron Works Co.

Drillers Hose (See Hose)—

Drilling & Fishing Tools—
Acme Fishing Tool Co.
Baash-Ross Tool Co.
Bovaird & Seyfang Mfg. Co.
Bovaird Supply Co.
Bridgeport Machine Co.
Brown Tool Co., Inc.
Burns Tool Co.
Continental Supply Co.
Cushing, Tim, Tool & Supply Co.
Emsco Derrick & Equip. Co.
General Oil Tools Co.
Hinderliter Tool Co.
Hughes Tool Co.
International Supply Co.
Larkin & Co.
Leidecker Tool Co.
Lucey Mfg. Corp.
Murray Tool & Supply Co.
Oil Well Supply Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Spang & Co.
Star Drilling Machine Co.
U. S. Tool Co.

Drilling Engines—(See Engines)—

Drilling Equipment—
Clark Brothers Co.
Hughes Tool Co.
O'Brien Steel Construction Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Star Drilling Machine Co.

Drilling Machines—
Leidecker Tool Co.
Oil Well Supply Co.
Star Drilling Machine Co.

Drilling Tools—(See Drilling and Fishing Tools)—

Drills—Portable Air—
Chicago Pneumatic Tool Co.

Drive Shoes—
Bartlesville Supply Co.
Larkin & Co.

Drops and Seats—
Norris Brothers, Inc.

Drums (See Barrels)—

Dynamos—
Westinghouse Electric & Mfg. Co.

E

Ejectors—
Penberthy Injector Co.

Electrical Equipment—
Fairbanks-Morse & Co.
Pyle National Co.
Wico Electric Co.

Electric Drilling Equipment—
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.

Electric Steel Castings (See Castings—Electric—Steel)—

Elevators—Casing and Tubing—
Bovaird Supply Co.
Bridgeport Machine Co.
Dunn Mfg. Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Wilson Oil Tools Corp.

Elevators—Rod—
B. & A. Specialty Co.
D. & B. Pump & Supply Co.
Dunn Mfg. Co.

Enamels—
Arco Company, The.
Detroit Graphite Co.
Sherwin-Williams Co.

Engineers—Consulting and Contracting—
Brooks Engineering Corp.
Hope Engineering & Supply Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
National Petroleum Engineering Corp.
Power Specialty Co.
Westcott & Greis.
Widdell Engineering Co.

Engineers—Fire Protection—
Brooks Engineering Corp.
Foamite-Childs Corp.

Engineers—Oil Buildings—
Austin Co.
International Derrick & Equipment Co.

Engineers—Oil Mining—
Ranney Oil Mining Co.

Engineers—Oil Treating—
Barnickel, Wm. S., & Co.
National Gas Products Co.

Engines—Crude Oil—
Continental Supply Co.
Western Machinery Co.

Engines—Diesel—
Bessemer Gas Engine Co.
Busch-Sulzer Bros. Diesel Engine Co.
Foos Gas Engine Co.
McIntosh & Seymour Corp.
Western Machinery Co.
Worthington Pump & Machinery Corp.

Engines—Drilling—
Ajax Iron Works.
Bessemer Gas Engine Co.
Bovaird & Seyfang Mfg. Co.
Brownell Co., The.
Buda Co.
Buffalo Gasolene Motor Co.
Clark Bros. Co.
Climax Engineering Co.
Franklin Valveless Engine Co.
Hercules Motor Corp.
Pattin Bros. Co.
Power Mfg. Co.
Republic Supply Co.
Titusville Iron Works Co.

Engines—Gas—
Bessemer Gas Engine Co.
Buda Co.
Buffalo Gasolene Motor Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Climax Engineering Co.
Continental Supply Co.
Cooper, C. & G., Co.
Emsco Derrick & Equip. Co.
Foos Gas Engine Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hope Engineering & Supply Co.
Ingersoll-Rand Co.
International Supply Co.
Jones, S. M., Co.
Marion Mch., Fdy. & Supply Co.
Miller Improved Gas Engine Co.
National Supply Co.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Titusville Iron Works Co.
Waukesha Motor Co.
Western Machinery Co.

Engines—Gasoline—
Buda Co.
Buffalo Gasolene Motor Co.
Climax Engineering Co.
Continental Motors Corp.
Fairbanks-Morse & Co.
Hercules Motor Corp.
International Harvester Co. of America.
Waukesha Motor Co.
Western Machinery Co.

Engines—Oil—
Bessemer Gas Engine Co.
De La Vergne Machine Co.
Fairbanks-Morse & Co.
Franklin Valveless Engine Co.
Ingersoll-Rand Co.
International Harvester Co. of America.
McIntosh & Seymour Corp.
National Supply Co.
Oil Well Supply Co.
Power Mfg. Co.
Reid, Joseph, Gas Engine Co.
Western Machinery Co.

Engines—Semi-Diesel, Oil—
Chicago Pneumatic Tool Co.

Engines—Steam—
Ajax Iron Works.
Frick-Reid Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.

Evaporators—
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.

F

Fabricators for Gasoline Plants and Refineries—
National Gas Products Co.
Stearns-Roger Mfg. Co.

Filters—Oil—
Burt Mfg. Co.

Fire Extinguishers—
Foamite-Childs Corp.

Fire Extinguishers — Recharge Service—
Foamite-Childs Corp.

Fishing Tools (See Drilling and Fishing Tools)—

Fittings—Dropped Forged Steel—
Vogt, Henry, Machine Co.

Fittings—Forged Steel—
Central Forging Co.

Fittings—Malleable & Cast Iron—
Bovaird Supply Co.
Crane Co.
Frick-Reid Supply Co.
Walworth Co.

Fittings—Pipe—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Gaso Pump & Burner Mfg. Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Kennedy Valve Mfg. Co.
Metric Metal Works.
Oil Well Supply Co.
Reading Steel Casting Co.
Republic Supply Co.
United Iron Works, Inc.
Victaulic Co. of America.
Walworth Co.

Fittings—Pipe Acid Proof—
Duriron Company.

Fittings—Steel—
Dayton Pipe Coupling Co.
Kerotest Mfg. Co.
Ohio Steel Foundry Co.
Walworth Co.

Flanges—Brass, Iron and Steel—
Jefferson Union Co.
Metric Metal Works.
Walworth Co.

Flange Unions—
Dart, E. M., Mfg. Co.
Gaso Pump & Burner Mfg. Co.

Flashlights—
National Carbon Co.

Floating Roofs and Decks—
Chicago Bridge & Iron Works.

Floodlights—
Pyle-National Co.

Forging Billets—
Andrews Steel Co.
Harrisburg Pipe & Pipe Bending Co.
Heppenstall Forge & Knife Co.

Forgings—
Champion Machine & Forging Co.

Fuel Oil (See Oil—Fuel)—

Fullers Earth—
Sinclair Refining Co.

G

Gas Holders—
Chicago Bridge & Iron Works.

Gaskets—
McCord Radiator & Mfg. Co.

Gaskets—Fibre—
Durabla Mfg. Co.
Garlock Packing Co.

Gas Masks & Safety Appliances—
Mine Safety Appliance Co.

Gasoline—
Crown Central Petroleum Co.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.

Gasoline—Natural—
Chestnut & Smith Corp.
National Gas Products Co.
Skelly Oil Co.
Warren Petroleum Co.

Gasoline Plant Equipment—
Bessemer Gas Engine Co.
Clark Brothers Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.
Widdell Engineering Co.

Gas Regulating Casinghead—
Davis, G. M., Regulator Co.
National Gas Products Co.

Gas Scrubbers—
National Gas Products Co.
Newton Process Mfg. Co.

Gauge Glass—High Pressure—
Durabla Mfg. Co.

Gauge Poles—
Marsh Gauge Pole Co.
Missouri Woodworking Co.

Gauges—Automatic Tank—
Brooks Engineering Co.

Gauges—Draft—
Brown Instrument Co.

Gauges—Oil—
Penberthy Injector Co.

Gauges—Pressure and Vacuum—
Bristol Co.
Brown Instrument Co.
Equitable Meter & Mfg. Co.
Foxboro Co., Inc.
Metric Metal Works.

Gauges—Test—
Equitable Meter & Mfg. Co.
Metric Metal Works.

Gear Driven Pumps (See Pumps)

Gears—Cut—
Nuttall, R. D., & Co.

Gears—Reduction—
Emsco Derrick & Equip. Co.
Nuttall, R. D., & Co.

Gears—Reverse—
Emsco Derrick & Equip. Co.

Generators—
Westinghouse Electric & Mfg. Co.

Generators—Acetylene—
Oxweld Acetylene Co.

Generators—Turbine—
Moon Manufacturing Co.
Pyle-National Co.
Westinghouse Electric & Mfg. Co.

Glassware—Chemical for Laboratory Use—
Illinois Glass Co.

Governors—
Equitable Meter & Mfg. Co.
Gardner Governor Co.

Governors—Boiler Feed—
Chaplin-Fulton Mfg. Co.
Fisher Governor Co.

Grating—Steel—
Blaw-Knox Co.

Grey Iron Castings (See Castings)

H

Hammers—Chipping and Calking Pneumatic—
Chicago Pneumatic Tool Co.

Hammers—Riveting Pneumatic—
Chicago Pneumatic Tool Co.

Hangers—Iron and Steel—
Continental Supply Co.
Dodge Mfg. Corp.

Hangers—Tubing—
Hercules Tool Co.

Hatches—Gauges and Thief—
Oil Conservation Engineering Co.

Heat Exchangers—
Carbondale Machine Co.
Griscom-Russell Co.
Hope Engineering & Supply Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.

Heat Interchangers—Fluid—
Braun, C. F., & Co.
Ross Heater & Mfg. Co., Inc.

Hoists—Pneumatic, Geared and Universal—
Chisholm-Moore Mfg. Co.
Yale & Towne Mfg. Co.

Hoists—Portable—
Chisholm-Moore Mfg. Co.
Ford Chain Block Co.
Sullivan Machinery Co.
Wright Mfg. Co.
Yale & Towne Mfg. Co.

Hooks for Rods and Tubing—
B. & A. Specialty Co.
Dunn Mfg. Co.

Hose—
Fenwick-Reddaway Mfg. Co.

Hose—Drillers—
Goodrich, B. F., Rubber Co.
United States Rubber Co.

Hose—Oil Suction and Discharge
Goodrich, B. F., Rubber Co.
United States Rubber Co.

Hose—Rubber—
Goodyear Tire & Rubber Co.
United States Rubber Co.

Hypochlorite of Lime—
Mathieson Alkali Works, Inc.

I

Injectors—
Penberthy Injector Co.

Inspectors—Pipe—
Hunt, Robert W., Co.

Insulation Materials—
General Insulating & Mfg. Co.
Johns-Manville, Inc.

Insurance—Fire—
Oil Insurance Association.

Insurance—Tornado—
Oil Insurance Association.

Iron—Ingot—
American Rolling Mill Co.

J

Jacks—Hydraulic—
Bridgeport Machine Co.

Jacks—Lifting—
Templeton, Kenly & Co., Ltd.

Jacks—Pumping—
American Mfg. Co. of Texas.
American Wells Works.
Bessemer Gas Engine Co.
Braden Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Norris, W. C.
Spang & Co.

Jars—
Arbon, Paul, & Co.
Bridgeport Machine Co.
Spang & Co.

Jar Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

K

Kerosene—
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.

L

Lacquers—
Arco Company, The.
Sherwin-Williams Co.

Lanterns—Electric—
Delta Electric Co.

Lead and Mixed Metal Products—
Eagle-Picher Lead Co.
National Lead Co.

Lead in Oil—
Eagle-Picher Lead Co.
National Lead Co.

Lead Wool and Containers—
Eagle-Picher Lead Co.

Lighting Equipment—
Pyle-National Co.
Westinghouse Electric & Mfg. Co.

Litharge—
Eagle-Picher Lead Co.
National Lead Co.

Loaders—Trucks—
Barber-Greene Co.

Long Distance Telephone—
American Telephone & Telegraph Co.

Lubricating Devices—
McCord Radiator & Mfg. Co.

Lubricators—
Ajax Iron Works.
Lunkenheimer Co.

Lubricators—Force Feed—
Hills-McCanna Co.
McCord Radiator & Mfg. Co.
Manzel Brothers Co.

M

Machine Tools—
Ryerson, Jos. T., & Sons, Inc.

Manholes—Tank—
Brooks Engineering Corp.

Manifolds—
Reid, Joseph, Gas Engine Co.

Meters—Gas—
Equitable Meter & Mfg. Co.
Foxboro Co., Inc.
Metric Metal Works.
Pittsburgh Meter Co.
Roots, P. H. & F. M., Co.
Westcott & Greis.

Meters—Electric—
Brown Instrument Co.

Meters—Gasoline—
Pittsburgh Meter Co.

Meters—Oil—
Pittsburgh Meter Co.

Molded Goods—Rubber—
Garlock Packing Co.
Goodyear Tire & Rubber Co.

Motors—Electric—
Fairbanks-Morse & Co.
Westinghouse Electric & Mfg. Co.

Motors—Gasoline (See Engines—Gasoline)—

N

Naphtha—
Pure Oil Co.

Natural Gasoline (See Gasoline—Natural)—

Natural Gasoline Plant Equipment—
Campbell, J. A.
Cooper, C. & G., Co.
Griscom-Russell Co.
National Gas Products Co.
Roots, P. H. & F. M., Co.
Ross Heater & Mfg. Co., Inc.
Smith Separator Co.
Westcott & Greis.

Nitrogen—
Linde Air Products Co.

Nozzles—Spray—
Power Plant Equipment Co.

O

Oil and Gas Pipe Line Construction—
Hope Engineering & Supply Co.

Oil Burners (See Burners—Oil)—

Oil Field Equipment—
Baker Casing Shoe Co.
Bridgeport Machine Co.
Gaso Pump & Burner Mfg. Co.
International Derrick & Equipment Co.
Iron King Mfg. Co.
Kaw Steel Construction Co.
National Supply Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Reid, Joseph, Gas Engine Co.
Republic Supply Co.
Simplex Equipment Co.
Trumble Gas Trap Co.

Oil—Fuel—
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Texas Company, The.

Oil—Gas—
Crown Central Petroleum Corp.
Gulf Refining Co.
Pure Oil Co.
Sinclair Refining Co.
Texas Company, The.

Oil—Lubricating—
Barnsdall Refining Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Humble Oil & Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.
Texas Company, The.

Oil—Tractor—
Barnsdall Refining Co.
Gulf Refining Co.
Pure Oil Co.
Skelly Oil Co.

Oiling Devices—
Lunkenheimer Co.

Oil Meters (See Meters)—

Oil Piping Equipment (See Fittings)—

Oil Reclaiming Process—
Barnickel, Wm. S., & Co.

Oil Well Cementing—
Halliburton Oil Well Cementing Co.

Oil Well Tools—
D. & B. Pump & Supply Co.
Hinderliter Tool Co.
Reed Roller Bit Co.
Titusville Forge Co.
U. S. Tool Co.

Over Shots—
Reed Roller Bit Co.
Regan Forge & Engineering Co.

Oxygen—
Linde Air Products Co.

P

Packer Release—
Acme Fishing Tool Co.

Packers—
Goodyear Tire & Rubber Co.
Guiberson Corp.
Larkin & Co.
Layne & Bowler Co.
Meier, E. C., Lubricating Co.
Oil Well Supply Co.
Regan Forge & Engineering Co.
Spang & Co.
United States Rubber Co.

Packing—
Crane Packing Co.
Durabla Mfg. Co.
Goodrich, B. F., Rubber Co.
Imperial Belting Co.
Johns-Manville, Inc.

Packing—Metallic—
Crane Packing Co.
Garlock Packing Co.

Paints—
Aluminum Co. of America.
American Asphalt Paint Co.
Arco Company, The.
Detroit Graphite Co.
Dixon, Joseph, Crucible Co.
Du Pont de Nemours, E. I. & Co., Inc.
Eagle-Picher Lead Co.
Eclipse Paint & Mfg. Co.
Hill, Hubbell & Co.
National Lead Co.
Sherwin-Williams Co.
St. Louis Surfacer & Paint Co.

Pipe—Cast Iron—
Greenspon's Jos., Sons Iron & Steel Co.
International Supply Co.
U. S. Cast Iron Pipe & Fdy. Co.

Pipe—Lead Chemical and Antimonial—
Eagle-Picher Lead Co.
National Lead Co.

Pipe—Steel—
Central Tube Co.
Continental Supply Co.
Greenspon's Jos., Sons Iron & Steel Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Murray Tool & Supply Co.
National Supply Co.
National Tube Co.
Republic Iron & Steel Co.
Ryerson, Jos. T., & Sons, Inc.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Taubman Supply Corp.
Wheeling Steel Corp.

Pipe—Wrought Iron—
Byers, A. M., Co.
Frick-Reid Supply Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Oil Well Supply Co.
Reading Iron Co.
South Chester Tube Co.
Superior Tube Co.
Taubman Supply Corp.

Pipe and Nipple Threading Machines—
Bignall & Keeler Mch. Works
Cox & Sons Co., The.
Landis Machine Co.
Ryerson, Jos. T., & Sons, Inc.
Standard Engineering Co.

Pipe Clamps (See Clamps—Pipe)

Pipe Grips—
Larkin & Co.

Pipe Headers—
National Tube Co.
Newton Process Mfg. Co.

Pipe Line Coatings—
Hill, Hubbell & Co.

Pipe Line Construction Tools—
National Transit Pump & Machine Co.

Pipe Line Equipment—
Gaso Pump & Burner Mfg. Co.

Pipe Screwing Machines—
Buckeye Traction Ditcher Co.

Pipe Straightening Machines—
W-K-M Co., Inc.

Pipe Suspension Device—
Stearns-Roger Mfg. Co.

Pipe Threaders—Power—
Williams Tool Corp.

Pipe Tools—
Armstrong Brothers Tool Co.
Nye Tool & Machine Works
Ridge Tool Co.
Walworth Co.

Piping—Fabricated—
Midwest Piping & Supply Co.

Piping—Hard Rubber—
United States Rubber Co.

Piping—Steel & Iron—
Crane Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Power Piping Co.

Pistons—
Guiberson Corp.
Hepenstall Forge & Knife Co.

Pistons—Expansion—
Wilson Oil Tools Corp.

Pistons—Swish Pump—
Guiberson Corp.

Plugs—Bottom Water—
Guiberson Corp.

Pre-Heaters—
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.

Preservatives—Asphalt—
American Asphalt Paint Co.

Pulleys—Wood, Iron and Steel—
Continental Supply Co.
Dodge Mfg. Co.

Pulling Machines—
Iron King Mfg. Co.
National Supply Co.
Safety Pulling Machine Co.

Pumpers—Long Stroke—
Farley Machine Co.

Pumping and Pulling Motors—Electric—
Westinghouse Electric & Mfg. Co.

Pumping Equipment—
American Well Works.
Axelson Machine Co.
Byron Jackson Pump Mfg. Co., Inc.
D. & B. Pump & Supply Co.
Farley Machine Co.
Gosnida Pumps, Inc.
Jones, S. M., Co.
Myers, F. E. & Bros., Co.
Northrup Equipment Co.
Oil Well Supply Co.
Prescott Co.
Ratigan, J. P., Co.
Waukesha Motor Co.

Pumping Gear Units—
Nuttall, R. D., & Co.

Pumping Powers—
Bessemer Gas Engine Co.
Buda Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Marion Mch., Fdy. & Supply Co.
National Supply Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Spence Machine Co.
Titusville Iron Works Co.

Pumps—Acid Proof—
Duriron Company.

Pumps—Boiler Feed—
Axelson Machine Co.
Ajax Iron Works.
Byron Jackson Pump Mfg. Co., Inc.
Fairbanks-Morse & Co.
Gardner Governor Co.
Goulds Pumps, Inc.
Oil Well Supply Co.
Smith Separator Co.

Pumps—Centrifugal—
American Well Works.
Byron Jackson Pump Mfg. Co., Inc.
Fairbanks-Morse & Co.
Goulds Pumps, Inc.
Smith Separator Co.
Worthington Pump & Machinery Corp.

Pumps—Direct Driven—
Bessemer Gas Engine Co.
Smith Separator Co.

Pumps—Electric—
Prescott Co.
Smith Separator Co.

Pumps—Fuel Oil Service—
Blackmer Pump Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Smith Separator Co.

Pumps—Fuel Oil Transfer—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.

Pumps—Gasoline and Oil for Filling Stations—
Gilbert & Barker Mfg. Co.

Pumps—Gear Drives—
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
Prescott Co.
Smith Separator Co.

Pumps—Hot Oil—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Goulds Pumps, Inc.
Smith Separator Co.

Pumps—Pipe Line—
Byron Jackson Pump Mfg. Co., Inc
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
National Transit Pump & Machine Co.
Prescott Co.
Worthington Pump & Machinery Corp.

Pumps—Portable—
Gaso Pump & Burner Mfg. Co.

Pumps—Power—
Fairbanks-Morse & Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
Myers, F. E., Bro. & Co.
National Transit Pump & Machine Co.
Prescott Co.
Smith Separator Co.
Waukesha Motor Co.

Pumps—Refinery—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
National Transit Pump & Machine Co.
Northern Fire Apparatus Co.
Smith Separator Co.

Pumps—Rotary—
Blackmer Pump Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Roots, P. H. & F. M., Co.

Pumps—Sand—
Bridgeport Machine Co.
Larkin & Co.
Smith Separator Co.

Pumps—Slush—
Gardner Governor Co.

Pumps—Steam—
Fairbanks-Morse & Co.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Prescott Co.
Smith Separator Co.

Pumps—Suction—
Gaso Pump & Burner Mfg. Co.

Pumps—Vacuum—
Bessemer Gas Engine Co.
Chicago Pnuematic Tool Co.
Clark Brothers Co.
Gaso Pump & Burner Mfg. Co.
Miller Improved Gas Engine Co.
Roots, P. H. & F. M., Co.
Ross Heater & Mfg. Co., Inc.
Smith Separator Co.

Pumps—Water—
American Well Works.
Byron Jackson Pump Mfg. Co., Inc.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Prescott Co.
Smith Separator Co.

Pyrometers—
Brown Instrument Co.
Republic Flow Meters Co.

R

Ratchet Pipe Cutters—
Toledo Pipe Threading Machine Co.

Ratchet Pipe Threaders—
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.

Ratchet Reamers—
Nye Tool & Machine Works.

Ratchet Stocks and Dies—
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.

Receiving Boxes—
Reid, Joseph, Gas Engine Co.

Recorders—Differential Pressure—
Equitable Meter & Mfg. Co.
Metric Metal Works.

Refinery Equipment—
American Radiator Co.
Blaw-Knox Co.
Braun, C. F., & Co.
Carbondale Machine Co.
Chicago Bridge & Iron Works.
Graver Corp.
Griscom-Russell Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Petroleum Appliance Co.
Petroleum Iron Works Co.
Power Piping Co.
Power Specialty Co.
Reid, Joseph, Gas Engine Co.
Ross Heater & Mfg. Co., Inc.
Ross-Meehan Foundries.
Smith, A. O., Corp.
Smith Separator Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.
United Iron Works, Inc.
Universal Oil Products Co.
Vogt, Henry, Machine Co.
Walsh & Weidner Boiler Co.
Westcott & Greis.
Widdell Engineering Co.

Refractories—Furnace, Stills and Baffles—
National Gas Products Co.

Refrigerating Machinery—
Carbondale Machine Co.
United Iron Works, Inc.
Vogt, Henry, Machine Co.

Regulators—
Fisher Governor Co.
Gilfillan Machine Works.
Smith Separator Co.

Regulators—Gas—
Chaplin-Fulton Mfg. Co.
Davis, G. M., Regulator Co.
Equitable Meter & Mfg. Co.
Fisher Governor Co.
Metric Metal Works.
National Gas Products Co.
Smith Separator Co.

Rental Service—
Bridgeport Machine Co.

Reversible Clutches—
Bessemer Gas Engine Co.

Rig Irons—
International Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.

Rigs—Drilling, All Steel—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

Rigs—Portable Drilling—
National Supply Co.
National Turnbuckle Derrick Co.
Star Drilling Machine Co.

Rod Guides—
Meier, E. C., Lubricating Co.

Rods—Gauge—
Missouri Woodworking Co.

Rods—Polish—
Jones, S. M., Co.

Rods—Pull—
Axelson Machine Co.
Columbus Sucker Rod Co.
Jones, S. M., Co.
Sheffield Steel Corp.

Rods—Sucker—
Axelson Machine Co.
Columbus Sucker Rod Co.
D. & B. Pump & Supply Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Sheffield Steel Corp.

Rods—Valve—
Jones, S. M., Co.

Roofing—Asbestos—
Johns-Manville, Inc.

Roofing—Galvanized Iron—
American Rolling Mill Co.

Rope Socket Metal—
Eagle-Picher Lead Co.

Rope—Manila—
Ajax Rope Co., Inc.
Bovaird Supply Co.
Republic Supply Co.

Rope—Wire—
Ajax Rope Co., Inc.
Bovaird Supply Co.
Bridgeport Machine Co.
Broderick & Bascom Rope Co.
International Supply Co.
Jarecki Mfg. Co.
Wickwire-Spencer Steel Corp.
Leschen, A., & Sons Rope Co.
Williamsport Wire Rope Co.

Rotary Bit Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Rotary Drilling Equipment—
Emsco Derrick & Equip. Co.
Frick-Reid Supply Co.
International Derrick & Equipment Co.
Link-Belt Co.
Lucey Mfg. Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Titusville Iron Works Co.

Rotary Lines (See Rope—Wire)—

Rotary Post—
Reed Roller Bit Co.

Rotary Tool Joints—
Bartlesville Supply Co.
Hughes Tool Co.

Rust Preventatives—
Dearborn Chemical Co.
Eagle-Picher Lead Co.

S

Sand Lines—Manila—
Ajax Rope Co., Inc.
Plymouth Cordage Co.

Sand Lines—Wire—
Ajax Rope Co., Inc.
Broderick & Bascom Rope Co.
Hazard Mfg. Co.
Wickwire-Spencer Steel Corp.

Screens—Oil Well—
Layne & Bowler Co.

Screens—Water Well—
Layne & Bowler Co.

Screws Temper—
Burns Tool Co.

Securities—Oil—
Pforzheimer, Carl H., & Co.

Separators—Centrifugal—
Miller, Max B., & Co.

Separators—Gas and Oil—
Smith Separator Co.

Separators—Steam—
Voiz Engineering Equipment Co.

Sheet Lead—Chemical and Antimonial —
Eagle-Picher Lead Co.

Sheets —Corrugated, Black and Galvanized—
American Rolling Mill Co.
American Sheet & Tin Plate Co.
Byerson, Jos. T., & Son, Inc.
United Alloy Steel Corp.

Sheets—Iron—
American Rolling Mill Co.

Sheets—Steel—
American Rolling Mill Co.
American Sheet & Tin Plate Co.
Sheffield Steel Corp.
United Alloy Steel Corp.

Shingles—Asbestos—
Johns-Manville, Inc.

Sliding—Galvanized Iron—
American Rolling Mill Co.

Sleeves—
Dayton Pipe Coupling Co.
Dresser, S. R. Mfg. Co.

Sleeves—Split—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.

Smoke Stacks—
Donovan Boiler Works.

Snuffers—Fire—
Simplex Equipment Co.

Sockets—
Acme Fishing Tool Co.
Bridgeport Machine Co.
Spang & Co.

Sockets—Sucker Rod—
Guiberson Corp.

Sockets—Swivel—
Arbon, Paul & Co.

Sockets—Wire Rope—
Chicago Steel Foundry Co.

Soda Ash—
Mathieson Alkali Works, Inc.

Soda—Caustic—
Mathieson Alkali Works, Inc.

Solders—Bar and Wire—
Eagle-Picher Lead Co.
Hoyt Metal Co.

Spark Plugs—
Mosler Metal Products Corp.

Spears—
Acme Fishing Tool Co.
Brown Tool Co., Inc.

Sprockets—Power Transmission—
Ajax Iron Works
Chain Belt Co.

Stands—Vise—
Nye Tool & Machine Works

Steel—All Kinds—
Ryerson, Jos. T., & Son, Inc.

Steel—Alloy—
Central Steel Co.
Timken Roller Bearing Co.
United Alloy Steel Corp.

Steel—Bit—
Central Steel Co.
United Alloy Steel Corp.

Steel—Hot Rolled Strip—
Central Steel Co.

Steel—Special—
Andrews Steel Co.
Central Steel Co.
United Alloy Steel Corp.

Steel Fabricators—Structural—
Austin Co.
Braden Co.
Graver Corp.
International Derrick & Equipment Co.

Steel Pitmans—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

Steel Plate Construction—
Chicago Bridge & Iron Works
Graver Corp.
Kaw Steel Construction Co.
Pennsylvania Engineering Works
Petroleum Iron Works Co.
Vogt, Henry, Machine Co.

Steel Wheel and Tug Rims—
International Derrick & Equipment Co.

Still Insulation—
Celite Products Co.

Stills—
Blaw-Knox Co.
Graver Corp.
Kaw Steel Construction Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Petroleum Iron Works Co.
Smith, A. O., Corp.
Vogt, Henry, Machine Co.
Widdell Engineering Co.

Stocks and Dies—
Borden Co.
Nye Tool & Machine Works
Toledo Pipe Threading Machine Co.

Stuffing Boxes—
Axelson Machine Co.
Kansas City Hay Press Co.

Sulphuric Acid—
Eagle-Picher Lead Co.

Superheaters—Steam—
Power Plant Equipment Co.

Swabs—
Arbon, Paul, & Co.
Burt Corporation
Guiberson Corp.
Simplex Equipment Co.

Swedge Nipples—
Dresser, S. R., Mfg. Co.
Harrisburg Pipe & Pipe Bending Co.

Swing Line Equipment—
Brooks Engineering Corp.

Swivels—
Layne & Bowler Co.
Lucey Mfg. Corp.
Titusville Iron Works Co.

T

Tachometers—
Brown Instrument Co.

Tank Equipment—
Brooks Engineering Corp.
Oil Conservation Engineering Co.

Tank Insulation—
Celite Products Co.

Tanks—Bolted—
Butler Mfg. Co.
Columbian Steel Tank Co.
Maloney Tank Mfg. Co.
Parkersburg Rig & Reel Co.

Tanks—Bulk Station—
Butler Mfg. Co.
Graver Corp.

Tanks—Cylindrical—
Graver Corp.
Petroleum Iron Works Co.

Tanks—Elevated Steel—
Chicago Bridge & Iron Works
Graver Corp.

Tanks—Field Storage—
American Car & Foundry Co.
Donovan Boiler Works
Graver Corp.
Kaw Steel Construction Co.
Kewanee Boiler Co.
Maloney Tank Mfg. Co.
Petroleum Iron Works Co.
Pittsburgh-Des Moines Steel Co.
Riter-Conley Co.
United Iron Works, Inc.

Tanks—Horizontal Storage—
Graver Corp.
Kaw Steel Construction Co.
Maloney Tank Mfg. Co.

Tanks—Run Down—
Chicago Bridge & Iron Works
Donovan Boiler Works
Graver Corp.
Kaw Steel Construction Co.
Newton Process Mfg. Co.

Tanks—Steel Storage—
Chicago Bridge & Iron Works

Tanks—Truck—
Butler Mfg. Co.
Columbian Steel Tank Co.

Tanks—Underground—
Butler Mfg. Co.
Gilbert & Barker Mfg. Co.
Graver Corp.
Kewanee Boiler Co.
Pittsburgh-Des Moines Steel Co.

Tanks—Welded—
Chicago Bridge & Iron Works
Graver Corp.
Pennsylvania Engineering Works

Taper Taps—
Hughes Tool Co.

Tapes—Measuring for Oil Gauging—
Lufkin Rule Co.
States Engineering Co.

Thermometers—Indicating and Recording—
American Schaeffer & Budenberg Corp.
Bristol Co.
Brown Instrument Co.
Foxboro Co., Inc.

Thermometers—Resistance—
Brown Instrument Co.

Threading Machines—
Bignall & Keeler Machine Wks.
Cox & Sons Co., The
Landis Machine Co.

Thread Protectors—
Spang & Co.

Tires—Automobile—
Continental Supply Co.

Tires—Pneumatic & Solid—
Kelly-Springfield Tire Co.

Tires—Truck—
Kelly-Springfield Tire Co.

Tongs —
Bridgeport Machine Co.
Wilson Oil Tools Corp.

Tongs—Back Up—
Williams, J. H., & Co.

Tongs—Break Out—
Reed Roller Bit Co.
Williams, J. H., & Co.

Tongs—Casing—
Dunn Mfg. Co.
Guiberson Corp.

Tongs—Chain Pipe—
Armstrong Bros. Tool Co.
Williams, J. H., & Co.

Tongs—Pipe—
National Transit Pump & Machine Co.

Tongs—Rotary—
Dunn Mfg. Co.

Tongs—Tool Joint—
Guiberson Corp.
Hughes Tool Co.
Reed Roller Bit Co.

Tongs—Tubing—
Dunn Mfg. Co.

Tool Chests—Pipe—
Nye Tool & Machine Works

Tool Joints—
Bridgeport Machine Co.
Federal Supply Co.
Hughes Tool Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Reagan Forge & Engineering Co.

Torches—
Oxweld Acetylene Co.

Towers—
Graver Corp.

Tractors—
Cleveland Tractor Co.
International Harvester Co. of America.

Trailers—
Spencer Trailer Co.

Transmission Belt—Rubber—
Goodrich, B. F., Rubber Co.
United States Rubber Co.

Transmission Lining—
Stanley Belting Corp.

Traveling Block—
Lucey Mfg. Corp.
Reagan Forge & Engineering Co.
Wright Mfg. Co.

Trenchers—Vertical Boom—
Barber-Greene Co.

Trucks—Motor—
Ford Motor Co.
General Motors Truck Co.
Graham Brothers
International Harvester Co. of America.

Tubes—Boiler, Charcoal Iron—
Byers, A. M., Co.
Reading Iron Co.

Tubes—Boiler Steel—
Continental Supply Co.
National Tube Co.
Ryerson, Jos. T., & Sons, Inc.

Tubing—
Babcock & Wilcox Tube Co.
Byers, A. M., Co.
Central Tube Co.
Continental Supply Co.
National Tube Co.
Pittsburgh Steel Products Co.
Reading Iron Co.
Republic Iron & Steel Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Wheeling Steel Corp.

Tubing Catchers—
Dunn Mfg. Co.
Guiberson Corp.

Tubing Protectors (See Rod Guides)—

Tubular Goods—
Babcock & Wilcox Tube Co.
Central Tube Co.
Continental Supply Co.
Oil Well Supply Co.
Pittsburgh Steel Products Co.
Republic Iron & Steel Co.
Spang, Chalfant & Co., Inc.
Wheeling Steel Corp.

Tubular Goods—Wrought Iron—.
Byers, A. M., Co.
Reading Iron Co.

Turbines for Lighting Equipment
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.

U

Underreamer Body Steel—
Andrews Steel Co.
Heppenstal Forge & Knife Co.

Underreamers—
Bridgeport Machine Co.
Brown Tool Co., Inc.
Guiberson Corp.
Wilson Oil Tools Corp.

Unions—
Central Forging Co.
Dart, E. M., Mfg. Co.
Jefferson Union Co.

V

Valuations—
American Appraisal Co.

Valves—Blow-Off—
Homestead Valve Mfg. Co.
Merco Norstrom Valve Co.

Valves—Brass & Bronze—
Homestead Valve Mfg. Co.
Lunkenheimer Co.
Reading Steel Casting Co.
Walworth Co.

Valves—Cast Steel—
Chapman Valve Mfg. Co.
Homestead Valve Mfg. Co.
Walworth Co.

Valves—Check—
Gaso Pump & Burner Mfg. Co.
Lunkenheimer Co.
Walworth Co.

Valves—Drop Forged Steel—
Edwards Valve & Mfg. Co.
Vogt, Henry, Machine Co.

Valves—Gate—High and Low Pressure—
Chapman Valve Mfg. Co.
Crane Co.
Darling Valve & Mfg. Co.
Kennedy Valve Mfg. Co.
Kerotest Mfg. Co.
Ludlow Valve Mfg. Co.
Lunkenheimer Co.
Murray Tool & Supply Co.
Powell, Wm., Co.
Walworth Co.

Valves—Iron—
Chapman Valve Mfg. Co.
Lunkenheimer Co.
Merco Norstrom Valve Co.
Reading Steel Casting Co.
Walworth Co.

Valves—Metal Pump—
Durable Mfg. Co.

Valves—Pump—
Garlock Packing Co.
United States Rubber Co.

Valves—Relief—Supersensitive—
Davis, G. M., Regulator Co.

Valves—Steel—
Chapman Valve Mfg. Co.
Edward Valve Mfg. Co.
Kerotest Mfg. Co.
Lunkenheimer Co.
Metric Metal Works
Powell, Wm., Co.
Reading Steel Casting Co.
Walworth Co.

Valves—Tank Vent —
Brooks Engineering Corp.
Oil Conservation Engineering Co.

Valves—Working Barrel—
Atlas Ball Co.
Axelson Machine Co.
D&B Pump & Supply Co.

Hough, Charles N., Mfg. Co.
Northrup Equipment Co.
Oil Well Supply Co.

Varnishes—
Arco Company, The
Detroit Graphite Co.
Sherwin-Williams Co.

Ventilators—Roof—
Burt Mfg. Co.

Vises—Bench—
Nye Tool & Machine Works

Vises—Pipe—
Nye Tool & Machine Works

Vises—Post—
Nye Tool & Machine Works

W

Wagons—Truss Wheel—
Athey Truss Wheel Co.

Walking Beams—Steel—
Emsco Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

Water Cooling Systems—
Power Plant Equipment Co.

Waterproofing—Concrete—
Master Builders Co.

Waterproofing Materials—
Celite Products Co.

Water Softeners and Filters—
Butler Mfg. Co.
Graver Corp.

Wax—
Barnsdall Refining Co.
Gulf Refining Co.
Pure Oil Co.

Weight Indicators—
Hughes Tool Co.

Welding Accessories—Electric—
Wilson Welder & Metals Co.

Welding and Cutting Apparatus—
Oxweld Acetylene Co.

Welding Machines—Electric—
Wilson Welder & Metals Co.

Welding Supplies—
Oxweld Acetylene Co.

Welding Wire—
Frick-Reid Supply Co.
Oxweld Acetylene Co.
Wilson Welder & Metals Co.

Well Shooting—
Eastern Torpedo Co.
Kinley, M. M.
Zero Hour Torpedo Co.

Wheels—Pipe Cutter—
Nye Tool & Machine Works

Winches—
Braden Co.
Brooks Engineering Co.
Oil Conservation Engineering Co.

Wire Lines (See Cables—Steel—

Wood Patterns and Models—
Gaso Pump & Burner Mfg. Co.

Working Barrels—
Axelson Machine Co.
D&B Pump & Supply Co.
D. & N. Specialty Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hough, Charles N., Mfg. Co.
McGregor, Working Barrel Co.
Norris, W. C.
Northrup Equipment Co.
Oil Well Supply Co.

Wrenches—Closet Spuds—
Nye Tool & Machine Works

Wrenches—Drop Forged—
Williams, J. H., & Co.

Wrenches—Pipe—
Trimont Mfg. Co.
Walworth Co.

Wrenches—Ratchet—
Dresser, S. R., Mfg. Co.
Nye Tool & Machine Works

Z

Zinc Oxide—
Eagle-Picher Lead Co.

Oklahoma-Kansas and Eastern Pipeline Report

OKLAHOMA-KANSAS PIPELINE STATEMENT FOR AUGUST

Runs

	Month	Daily Av.
*Prairie Pipe Line Co.	3,999,000	129,000
Gulf Pipe Line Co.	1,296,792	41,832
Texas Pipe Line Co.	632,499	20,403
Magnolia Petroleum Co.	1,116,864	36,028
Empire Pipe Line Co.	728,753	23,508
Cosden Pipe Line Co.	833,167	26,876
Sinclair Pipe Line Co.	1,921,535	61,985
*Other lines	7,812,000	252,000
Total August	18,340,610	591,632
Total July	18,271,500	589,403
Difference	68,110	2,229

Shipments

	Month	Daily Av.
*Prairie Pipe Line Co.	4,005,485	129,209
Gulf Pipe Line Co.	1,248,976	40,289
Texas Pipe Line Co.	789,840	25,479
Magnolia Petroleum Co.	1,373,981	44,322
Empire Pipe Line Co.	933,347	30,108
Cosden Pipe Line Co.	952,263	30,718
†Sinclair Pipe Line Co.	2,636,726	85,056
*Other lines	7,967,000	257,000
Total August	19,907,618	642,181
Total July	19,785,635	638,246
Difference	111,983	3,935

Stocks

*Prairie Oil & Gas Co.	27,400,000
*Prairie Pipe Co.	2,000,000
Gulf Pipe Line and Gypsy Oil	6,620,200
The Texas Company	2,893,695
Magnolia Petroleum Co.	3,904,202
Empire Pipe Line Co.	2,424,622
Cosden Pipe Line Co.	1,910,722
*Sinclair Crude Oil Purchasing Co.	17,626,000
Carter Oil Co.	12,646,875
*Other lines	9,280,000
Total August	86,700,316
Total July	87,649,450
Difference	949,134

*Estimated.

†Sinclair shipments also include Texas and Wyoming crude oil.

Note: Stocks do not include 4,200,000 bbls. of crude oil held in storage on private tank farms and leases.

EASTERN PIPE LINES

Runs From Wells

In the following table will be found the regular receipts from wells by various pipelines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for July and August:

	July, '26	Aug., '26
Nat. Transit	163,355.48	161,323.78
S. W. Pa. P. L.	101,686.03	96,367.93
Eureka P. L.	392,989.67	381,142.94
Buckeye P. L. (Macksburg)	306,269.80	307,707.87
Buckeye P. L. (Cleveland)	11,170.47	11,268.78
Buckeye P. L. (Lima, etc.)	137,149.47	128,103.04
Indiana P. L.	10,828.41	10,825.64
Cumberland P. L.	282,211.58	278,950.07
N. Y. Transit	21,334.18	20,228.51
Tidewater P. L.	168,564.93	166,918.60
Pure Oil Co.	176,480.50	168,350.74
Emery P. L.	63,064.83	65,942.07
Indian Ref.	104,990.13	103,137.03
Paragon Dev.	22,718.44	22,043.09
Pittsburgh P. L.	6,486.24	5,960.11
Total	1,959,400.15	1,916,270.20
Daily average	63,206.46	61,815.17

Note—Indian Refining Co. also reported other receipts of 255,477.05 bbls. Paragon Refining Co. had other receipts of 154,122.42 bbls. Paragon Development had other receipts of 1,538.22 bbls. Pure Oil had other receipts of 72,926.96 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipelines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for July and August:

	July, '26	Aug., '26
Nat. Transit	370,891.32	419,519.29
S. W. Pa. P. L.	409,458.00	407,494.63
Eureka P. L.	194,592.54	206,253.08
Buckeye P. L. (Macksburg)	154,972.89	139,988.47
Buckeye P. L. (Cleveland)	1,408.19	727.93
Buckeye P. L. (Lima, etc.)	896,654.71	787,040.76
Indiana P. L.	995,699.54	996,002.96
Cumberland P. L.	168,426.65	149,487.18
Southern P. L.	.....	2,461.03
N. Y. Transit	648,783.66	437,982.40
Northern P. L.	185,783.37	199,543.86
Tidewater P. L.	107,643.03	130,278.71
Pure Oil Co.	238,473.30	259,867.54
Emery P. L.	54,161.96	56,844.78
Paragon Ref.	159,136.74	134,578.87
Indian Ref.	372,128.62	357,390.83
Paragon Dev.	24,924.64	18,580.37
Pittsburgh P. L.	7,169.76	6,737.74
Total	4,989,308.90	4,709,789.43
Daily average	160,945.45	151,928.69

Gross Stocks

The gross stocks held by various pipelines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky, at the close of July and August were as follows:

	July, '26	Aug., '26
Nat. Transit	1,053,770.84	1,095,592.26
S. W. Pa. P. L.	683,787.99	644,407.20
Eureka P. L.	1,483,121.26	1,426,004.84
Buckeye P. L. (Macksburg)	415,112.82	461,200.92
Buckeye P. L. (Cleveland)	85,333.91	93,451.86
Buckeye P. L. (Lima, etc.)	2,428,415.17	2,585,923.06
Indiana P. L.	576,702.06	578,735.50
Cumberland P. L.	633,819.77	601,941.96
Southern P. L.	476,270.69	404,780.18
N. Y. Transit	822,714.93	748,135.27
Northern P. L.	433,011.93	385,641.31
Pure Oil Co.	450,205.94	429,758.51
Emery P. L.	37,324.53	34,677.04
Paragon Ref.	36,256.80	65,249.43
Indian Ref.	110,400.30	109,296.55
Paragon Dev.	4,313.95	9,505.95
Pittsburgh P. L.	4,124.64	4,041.24
Total	9,734,686.53	9,668,946.98
Increase	148,782.41	*65,739.55

*Decrease.

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipelines at the close of July and August showing the gross stocks of the above fields:

	July, '26	Aug., '26
Pennsylvania	4,047,426.23	4,021,829.40
Lima	859,783.19	826,740.17
Kentucky	1,249,214.91	1,185,429.48
Mid-Continent	3,502,567.49	3,593,693.56
Illinois	75,702.65	41,254.37
Total	9,734,686.53	9,668,946.98

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1923	1924	1925	1926
January	75,790	62,638	56,831	55,630
February	71,092	68,023	60,606	60,394
March	76,592	68,721	60,575	61,644
April	75,614	71,058	63,062	63,919
May	77,365	63,942	59,217	60,580
June	77,593	63,230	61,270	64,131
July	71,879	64,208	62,639	63,206
August	76,910	59,942	59,686	61,815
September	72,358	62,930	62,510	.....
October	76,256	64,976	60,995	.....
November	70,762	56,282	59,350	.....
December	69,271	55,814	57,974	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1923	1924	1925	1926
January	171,067	145,518	157,889	156,056
February	164,219	148,732	160,863	159,488
March	185,487	147,098	154,591	150,239
April	170,751	147,611	151,429	152,371
May	177,102	134,937	146,995	150,988
June	173,598	143,010	149,467	160,257
July	168,330	124,187	161,338	160,945
August	142,776	123,120	161,730	151,929
September	137,266	127,325	156,719	.....
October	134,597	123,170	145,388	.....
November	131,426	124,400	143,582	.....
December	139,909	151,392	150,162	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1924	1925	1926
January	12,907,202	11,353,276	9,866,1[illegible]
February	11,844,068	11,192,924	9,870,[illegible]
March	10,906,752	11,158,297	9,838,[illegible]
April	10,922,742	11,062,082	9,906,[illegible]
May	11,335,309	11,207,562	9,851,[illegible]
June	11,544,204	11,093,796	9,886,[illegible]
July	12,062,361	11,067,463	9,734,[illegible]
August	12,221,676	10,974,481	9,668,946
September	12,206,836	10,781,752	.....
October	12,664,061	11,086,850	.....
November	12,268,530	11,068,158	.....
December	11,583,680	10,458,445	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and has counted in the stocks and averages reported above:

	Receipts	Shipmts.	Stocks
1925—			
July	2,639.34	3,174.10	11,558.[illegible]
August	3,216.97	1,577.99	13,181.[illegible]
September	2,929.99	5,352.05	10,767.[illegible]
October	2,869.75	1,499.34	12,137.[illegible]
November	759.66	2,571.32	12,325.[illegible]
December	2,661.87	3,441.67	11,602.[illegible]
1926—			
January	2,990.16	1,478.35	13,015.[illegible]
February	2,580.23	2,776.19	12,819.[illegible]
March	2,754.62	1,732.77	13,841.[illegible]
April	3,137.40	4,519.68	12,458.[illegible]
May	2,933.29	2,096.35	13,295.[illegible]
June	3,217.62	1,655.15	14,858.[illegible]
July	3,025.86	4,075.11	13,808.[illegible]

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks Sept. 1	1,358,218.[illegible]
Runs from wells	672,194.[illegible]
Other receipts	381,177.[illegible]
Regular deliveries	486,562.[illegible]
Other deliveries	734,776.[illegible]

The amount of Illinois oil run by the Tide Water Pipe Co. in August was 29,661.70 bbls. and deliveries were 70,213.05 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1925—		
August	673,652.38	650,840.[illegible]
September	706,434.87	510,697.[illegible]
October	706,532.00	532,683.[illegible]
November	664,556.30	488,443.[illegible]
December	665,086.99	578,988.[illegible]
1926—		
January	666,243.62	516,063.[illegible]
February	632,611.99	506,316.[illegible]
March	753,300.74	524,626.[illegible]
April	610,957.04	487,696.[illegible]
May	682,416.07	498,456.[illegible]
June	693,102.34	558,054.[illegible]
July	713,490.66	490,062.[illegible]
August	701,795.92	556,766.[illegible]

The Tide Water Pipe Co., Ltd., also delivered in August 225,332.20 bbls. of Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Average bbls. per day—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: New Orleans Galveston	Port Arthur Baton Rouge	Sabine Pass	Tampa	Total	Total All Ports
May	27,065	7,903	15,387	13,452	17,742	81,549	.....	.....	4,032	.....	4,032	85,[illegible]
June	24,533	11,000	22,800	34,467	15,167	107,967	.....	.....	.....	.....	.....	107,[illegible]
July	15,677	2,903	24,678	12,065	12,516	67,839	.....	.....	645	.....	645	68,[illegible]
August	14,839	10,389	24,871	17,742	17,677	85,518	.....	.....	.....	.....	.....	85,[illegible]

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

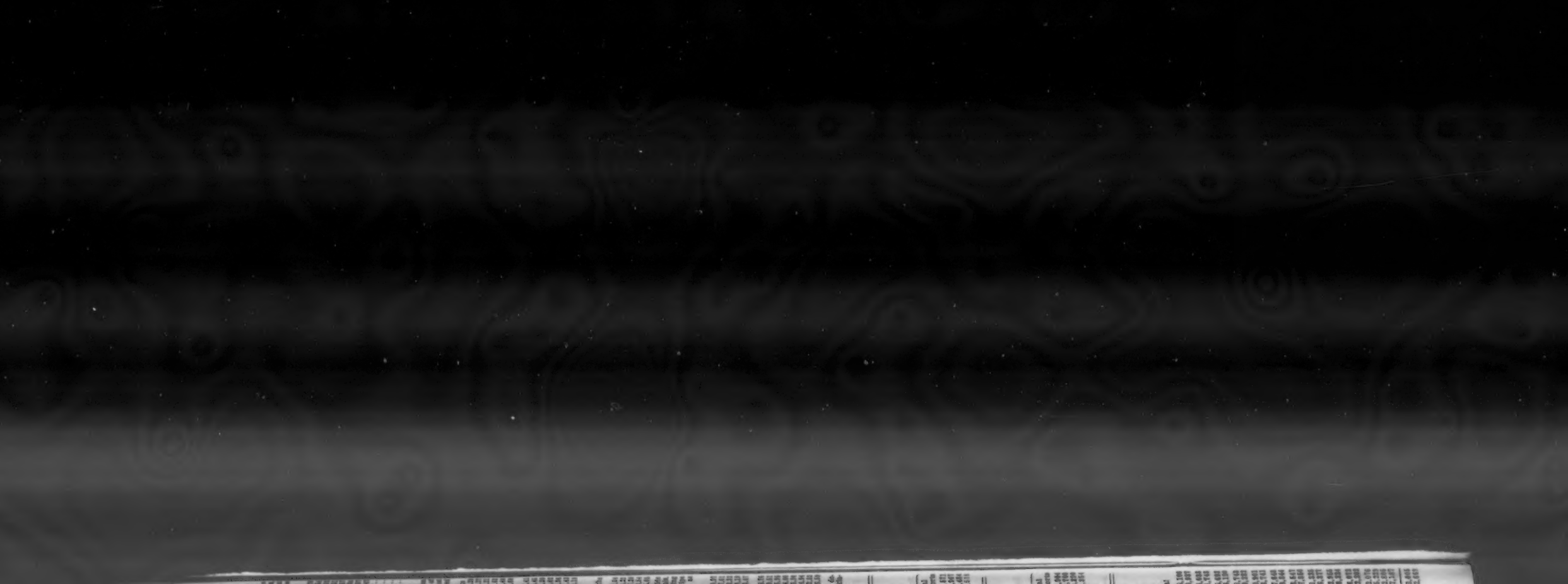
Average bbls. per day—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: New Orleans Galveston	Port Arthur Baton Rouge	Sabine Pass	Tampa	Total	Total All Ports
May	12,387	13,258	75,516	11,645	21,543	133,355	17,710	45,226	1,936	5,677	65,549	198,904
June	15,809	10,800	87,300	6,500	21,367	141,667	25,200	42,267	2,900	7,032	77,032	218,700
July	31,517	7,774	89,548	4,774	26,194	149,806	*13,226	†30,774	‡2,272	6,452	52,424	202,230
August	21,903	4,581	79,871	5,323	18,742	130,420	*19,516	†57,354	‡5,161	2,903	84,934	215,354

*Received at Galveston district. †Received at New Orleans and Baton Rouge. ‡Received at Port Arthur and Sabine Pass.

GROSS PRODUCTION OF THE UNITED STATES FOR 12 MONTHS

(IN BARRELS)

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
September:	Month	20,062,763	14,825,040	11,264,890	3,393,270	6,457,950	1,776,570	3,235,635	3,212,000	64,228,[illegible]
	Daily average	668,759	494,168	375,496	113,109	215,265	59,219	107,854	107,067	2,140,[illegible]
October:	Month	20,016,076	14,921,199	11,196,511	3,477,146	6,409,321	1,871,830	3,394,990	3,248,000	64,534,[illegible]
	Daily average	645,648	481,329	361,178	112,166	206,751	60,383	109,500	104,774	2,081,[illegible]
November:	Month	19,095,907	14,590,980	10,650,087	3,321,760	5,927,955	1,758,883	3,088,121	2,992,000	61,326,[illegible]
	Daily average	636,530	486,366	355,003	107,397	197,599	58,629	102,937	99,753	2,044,[illegible]
December:	Month	19,249,711	14,123,848	10,930,455	3,308,816	6,047,882	1,763,966	3,187,164	3,086,900	61,698,[illegible]
	Daily average	620,959	455,608	352,595	106,736	195,093	56,902	102,813	99,552	1,990,[illegible]
January:	Month	19,069,562	13,674,813	11,049,715	3,250,536	5,489,604	1,726,290	3,136,280	3,014,000	60,410,[illegible]
	Daily average	615,147	441,122	356,442	104,856	177,084	55,690	104,396	97,226	1,948,[illegible]
February:	Month	17,163,963	12,393,016	9,943,232	2,877,812	4,756,836	1,584,184	2,778,605	2,931,000	54,427,[illegible]
	Daily average	612,999	442,572	355,115	102,779	169,887	56,578	99,236	104,678	1,944,[illegible]
March:	Month	18,825,786	14,312,886	11,014,238	3,334,887	5,115,837	1,839,663	3,161,250	3,249,000	61,053,[illegible]
	Daily average	608,283	461,706	355,298	107,577	165,027	60,957	101,976	108,032	1,967,[illegible]
April:	Month	18,091,771	14,468,190	10,799,760	3,330,120	5,127,510	1,959,570	3,231,404	3,188,000	60,191,[illegible]
	Daily average	603,059	482,273	359,992	111,004	170,917	65,319	104,239	106,100	2,006,[illegible]
May:	Month	18,667,144	14,507,008	11,940,797	3,516,640	5,482,939	2,231,938	3,459,489	3,217,000	63,122,[illegible]
	Daily average	602,166	467,968	385,187	113,440	176,879	71,998	111,596	107,000	2,036,[illegible]
June:	Month	18,269,417	14,073,510	11,783,550	3,366,450	5,064,760	2,305,480	3,427,905	3,165,000	61,566,[illegible]
	Daily average	608,981	469,117	392,785	112,215	168,822	76,816	114,597	112,187	2,052,[illegible]
July:	Month	18,743,199	14,667,482	13,983,759	3,613,267	5,019,892	2,174,813	3,336,664	3,424,000	64,952,[illegible]
	Daily average	604,619	473,822	451,089	116,557	161,932	70,123	107,634	110,452	2,096,[illegible]
August:	Month	18,765,080	14,615,226	17,077,626	3,712,436	4,978,191	2,190,739	3,457,657	3,420,000	68,116,[illegible]
	Daily average	605,325	471,459	550,756	119,756	157,361	73,895	111,538	110,335	2,197,[illegible]
	Total 12 months	226,019,380	171,162,208	141,630,430	40,403,140	65,778,628	23,133,025	38,905,184	38,541,900	745,573,[illegible]
	Daily average	619,204	468,935	388,029	110,693	180,216	63,378	106,589	105,435	2,042,[illegible]



Congratulations
Miss America

MISS TULSA—Queen of Beauty, High Priestess of Pulchritude—we salute you!

We salute you as fellow Tulsans, proud of the honor you have accorded us.

Knowing something of the merits required to forge ahead in the face of strong and worthy competition, we salute you with a full appreciation of your accomplishment.

Fig. 601.

To win in a local bathing beauty contest is honor enough. To be a victor in a nation-wide contest of victors is a tribute that comes to few.

• • •

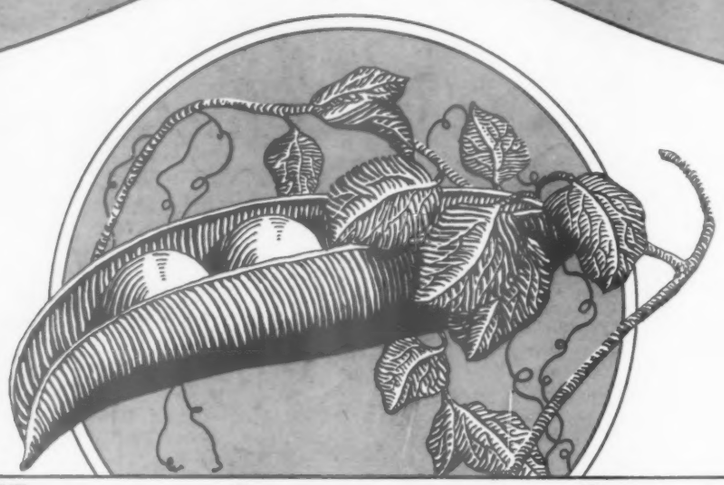
Fig. 604.

Figure 601—[450 to 600 pound pressure]—a sturdy pump designed for oil or water service. Extra long stroke gives straight line pull; practical absence of gasket surface adds to long, trouble-free operation.

Figure 604—Gaso Walking Beam and Power Pump for gas or vacuum. Constructed to stand world of abuse. For taking gas from pumping well or putting vacuum on well.

GASO PUMP & BURNER MFG. CO.
Tulsa, Oklahoma

GASO PUMPS
for every oil industry need



As alike as two peas in a pod

THE workmanship and material in SWAN UNDERREAMERS never varies from the high standards demanded for service in the oil fields where only the best can endure. SWAN UNDERREAMERS are as alike in quality as two peas—they are as sturdy and reliable as human skill and mechanical science can make them.

THE QUALITY NEVER, NEVER VARIES

W. H. CHAFFEE, Electra, Texas, writes us, unsolicited, some interesting facts concerning the Swan. Maybe you never thought about it in this way:

"Almost every well drilled around here does more underreaming with the Swan than anything you have printed yet, and the most important thing about the Swan, something no other reamer will do, you have not mentioned. The wells in this district encounter many water sands. It is practically impossible to drill them wet. The pipe must be set down and the hole bailed dry to ever get any hole ahead. One is lucky to get 100 feet ahead of the pipe. When we get ready to underream with a Swan we just run it in and 'hitch on' anywhere below the pipe, ream down to bottom, fill up the hole with water, raise the pipe, underream the 'shoulder' and we are ready to lower the pipe. With any other underreamer it is necessary to raise the pipe first and stay on top of the shoulder all the time. Have seen other reamers 'jarred' on for days and never gotten loose that were accidently tripped below a shell or sand. The Swan will always pull out anywhere. This 'dry underreaming' saves days every time we underream, fighting caves, and this one feature of the Swan will buy an underreamer in time saved on one well in this district. This whole country will cave when it gets water on it. We have to dump water all the way. It is unusual to see anything but a Swan Underreamer here, all sizes."

THE BRIDGEPORT MACHINE COMPANY
WICHITA KANSAS

BRANCHES

Wichita, Kans.*	Winfield, Kans.	Wetumka, Okla.	Pawnee, Okla.*
Russell, Kans.*	Tulsa, Okla.	Tonkawa, Okla.	Ranger, Tex.
Gorham, Kans.	Stroud, Okla.	Garber, Okla.	Panhandle, Tex.*
El Dorado, Kans.	Depew, Okla.	Braman, Okla.*	Isom, Tex.
	Breckenridge, Tex.	Marietta, Ohio	

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